THE AMERICAN GAS LIGHT JOURNAL

PUBLISHING OFFICE No. 42 PINE STREET

DEVOTED TO THE INTERESTS OF ILLUMINATION, HEATING, MECHANICAL, CHEMICAL AND GENERAL SCIENCE.

VOLUME LXXXVIII., No. 9. Whole No. 1,708. | NEW YORK, MONDAY, MARCH 2, 1908. | $3 PER ANNUM, IN ADVANCE.

A. M. CALLENDER & CO., Proprietors. | THOMAS J. CUNNINGHAM, ELBERT P. CALLENDER, Editors.

ENTERED AT THE POST OFFICE AT NEW YORK, N. Y., AS SECOND-CLASS MATTER.

Published on each Monday of the year, at No. 42 Pine Street, New York.

Telephone.—2996 John.

Terms of Subscription, Including Postage.—For the United States, $3; Canada, $4 per annum. European countries, $5 (£1—25 francs).

The Public Lighting Tables of the American Meter Company will be found in the page advertisement of that Company.

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[OFFICIAL NOTICE.]

Change of Place of Meeting, American Gas Institute.

HEADQUARTERS, AMERICAN GAS INSTITUTE,
UNITED ENGINEERING SOCIETIES' BUILDING,
NEW YORK, Feb. 25, 1908.

To the Members of the American Gas Institute:

A postal card ballot on the proposed change of place of meeting for 1908, as recommended by the Board of Directors, has been canvassed with the following result:

Votes cast	663	
In favor of New York		522
" " Detroit		125
Invalid		16

As a result of this ballot the next meeting will be held in New York.

ALEX. C. HUMPHREYS, President.

BRIEFLY TOLD.

THE ATTORNEY-GENERAL MAY NOT INSTITUTE SUIT.—Shortly after his induction into office as Attorney-General of the State of New York, to which high position he was wafted by the votes cast in the queerest of all elections—that of the Fall of 1906—declared, as the champion of the people who carried the Hearst banner, he was to act speedily and forcefully against all trusts. Of course, the Consolidated Gas Company, as those altogether outside of its management know, and as those directly concerned in its management do not know, is a trust of the newest, and, therefore, most oppressive type. In that knowledge, eager to wield a club, even though the stick might not be roughened by as many knots as that wielded in another district of the States, and with it batter the Company out of any form of usefulness, he aimed a blow at the Consolidated corporation. He would have much liked to strike at once, but as even State Attorneys are bound to observe lawful forms he found himself compelled to appeal to the Supreme Court for leave to bring suit to annul the charter of the Consolidated Company. If his petition to that authority could be believed, in the instance of almost a single one of its flat affirmances, the Company should have been estopped forthwith from trading and its executives impounded or put where they could no longer or further practice baneful ways of evading the law to the dire disadvantage of the citizens of the Borough of Manhattan. He first appealed to Mr. Justice McCall, of the Supreme Court, for permission to institute an annulment suit, urging (to put it briefly) that the Company was a monopoly and that its corporate being was maintained against the State laws concerning trusts. The first try was speedily over and resulted in a decision virtually to send the matter to the Appellate Division of the Court for determination. After a patient hearing and a dignified consideration of the arguments submitted, the Court (all concurring, save Judge Laughlin) about a fortnight ago handed down an opinion (written by Mr. Justice Scott) which in effect declares: That no good public purpose would be served by the institution of such an action as the Attorney-General asked permission to bring. The opinion looks and reads to us as the well matured thought of men who gave to their subject more close study and lengthier consideration than usually given to cases of this kind. In view of the importance of the decision, keeping in mind its relation to the varying phases of the construing of the anti-trust laws of the State, we here submit these extracts from it:

"What is prohibited is the creation of a monopoly and establishing such a condition as will result in limiting the supply and enhancing the cost of the commodity dealt in. In no sense can the consolidation of the lighting companies in the city of New York into a single corporation be said to create such a monopoly, for it thereby gains no exclusive right; the field is still open to any other company that can obtain the necessary consents from the constituted authorities, and neither the production nor the price can be arbitrarily fixed by the Consolidated Company.

"In this respect there is a very clear distinction between a company supplying gas or electricity and a corporation or combination of producers who deal in ice, envelopes, bluestone, milk, sheep and lambs, coal and lard, as to all of which our courts have condemned combinations organized for the purpose of controlling output and fixing prices.

LIBRARY OF CONGRESS. MAR 3 1908 SMITHSONIAN DEPOSIT.

"In the case of the Consolidated Gas Company it cannot, as a result of its control of the business of furnishing light, either limit production or increase prices and maintain them, because both of those matters are within the control of the Legislature. It is within the power of that body, and it has frequently used the power, to fix the maximum rate which may be charged to consumers, and it is well settled that any person within the territory served by a gas or electric light company is entitled to be furnished with such gas or electricity as he requires upon payment of the statutory price therefor, and can compel the company so to furnish it.

"That a single company thus regulated by law as to price and production does not offend against the anti-monopoly laws, even though its field of operation extends over a whole city, seems to be quite clear. Competition between two or more companies, each occupying exclusively a separate field of operation, could benefit no one. A competition which would operate to reduce prices must be between companies occupying the same field, and while the consolidation of control effected by the purchases of stock in other companies by the Consolidated Company does not necessarily prevent such competition, it is the settled policy of the State to discourage competition of this character, and the reasons for the adoption of this policy have been clearly stated by the Court of Appeals. By Sec. 11 of the Gas and Electric Commission, Act of 1905, it was provided that no corporation should exercise its power without first obtaining a certificate of authority from the Commission, and the Commission was authorized to withhold its certificate, 'If the territory within which such corporation proposes to operate is already supplied with an ample and well constructed system, furnishing the service which such corporation proposes to furnish at a fair and reasonable rate,' and while the act containing this provision has been superseded and repealed by the Public Service Commission law, that act continues the prohibition of the exercise of its powers by any gas or electrical corporation until it shall have first obtained the permission and approval of the proper Commission provided by the act. * * * Judgment vacating the charter of the Consolidated Company would at once prevent it from carrying on the business of manufacturing and selling gas and electricity. So far as we are aware, there is no other company ready to take up the business at once and the erection and installation of the necessary plant to supply the needs of a great city would necessarily take a considerable time. The order appealed from must be affirmed."

"ANALYSES OF ACCOUNTS OF GAS COMPANIES."—A copy of this series of sheets, recently from the press of John Allan & Co., London, England, is before us. It has to do with the assembling and digesting of the accounts of 120 British gas companies, ranging in size between that of the mammoth Gas Light and Coke Company, of London, with its vast total capitalization of £27,514,000 and of the Doncaster provincial undertaking the capital of which is given at £21,800. The accounts are so arranged that it is impossible to become confused over them, and their teachings go to amaze one at the vastness of the industry in the British Islands. To show how minutely the matters are gone into the headings thereof are here reproduced: Coal carbonized; per centage of carburetted water gas; gas made, sold and unaccounted for; yield of residuals; gas and meter rentals; receipts from residuals; manufacturing charges; rates and taxes; distributing charges; management; bad debts; net cost of gas; mileage of mains; consumers; public lamps; capital or debt; capital per ton coal and per 1,000; reserve funds. With these things known a Company's standing should be plainly revealed. The get-up of the tables is irreproachable—well printed on reinforced linen folios, bound in morocco and of a size that would delight the student of such tomes, it certainly is a credit to its compilers and pubishers. The price is $4.

CURRENT COMMENT.—

ONE pleasant sequel to the New England Association's meeting was the visit paid to the Commercial Department of the Boston Consolidated Gas Company, the afternoon of Feb. 20th, of Mr. George Williams, Manager of the Doherty Operating Company. Mr. Williams, who was accompanied by Mr. William H. Gardiner, also prominent in the Doherty forces, addressed the employees. In the course of his remarks he complimented his hearers on the excellence of the methods under which they were working.

THE Practical Gas Construction Company, of Waukegan, Ills., has made a voluntary assignment. Cause, inability to successfully negotiate loans.

MR. JAMES F. GRINSTEAD, Mayor of Louisville, Ky., has appointed Mr. John C. Struss to the post of City Gas Inspector, vice Mr. H. M. Brennan.

THE proprietors of the Atlanta (Ga.) Gas Light Company have entered into a contract with the Atlanta Gas Coke, Coal and Mining Company, whereby the latter will handle all the coke manufactured by the former. The contractor is a branch of the Cincinnati coke concern that is managed by Mr. William Clauss.

CHARLES D. TAYLOR has been dismissed from the service of the Montclair branch of the Public Service Corporation, of New Jersey.

MR. SAMUEL W. GEORGE, of Haverhill, Mass., formerly a member of the Massachusetts Board of Gas and Electric Light Commissioners, has been appointed to the position of Assistant Appraiser of Merchandise in the district of Boston and Charlestown.

MR. E. P. DILLON, of Denver, Col., has been appointed Manager of the Colorado Springs (Col.) Electric and Gas Company.

[OFFICIAL REPORT.—AS FURNISHED BY THE SECRETARY.]

THIRTY-EIGHTH ANNUAL MEETING, NEW ENGLAND ASSOCIATION OF GAS ENGINEERS.

HELD IN YOUNG'S HOTEL, BOSTON, MASS., FEB. 19 AND 20, 1908.

FIRST DAY—MORNING SESSION.

The Thirty-Eighth annual meeting of the New England Association of Gas Engineers was held at Young's Hotel, Boston, Wednesday and Thursday, February 19 and 20, 1908, under the Presidency of Capt. William McGregor. It was called to order at 10:30 A.M., of Wednesday, February 19, the President saying: The first business of the meeting will be reading of the Secretary's minutes.

Mr. Africa—Mr. President, as the "Proceedings" have been published in the gas JOURNALS, I move that their reading be dispensed with. [Adopted.]

REPORT OF BOARD OF DIRECTORS.

The President—The next business will be the Directors' report. The Secretary read the report, as follows:

To the Members of the New England Association of Gas Engineers—Your Directors would report as follows: They would recommend the following named gentlemen for election to membership, provided the admission fee be paid:

Active.

Beedy, F. E., Supt., Chelsea (Mass.) Gas Light Co.

Hintze, H. S., Supt. gas works, Bristol and Plainville Tramway Co., Bristol, Conn.

Kaltwassar, C. M., Supt., The Connecticut Co., So. Norwalk, Conn.

Kennedy, J. P., Supt., Cambridge (Mass.) Gas Light Co.

Kellogg, R. M., Supt., Lowell (Mass.) Gas Light Co.

Transfer.

That A. M. Barnes be transferred from associate to active membership.

And that the following names be recommended for election to

Associate Membership.

Abbott, F. M., Manager, St. Johnsbury (Vt.) Gas Co.

Buckminster, R., Works' Foreman, Lowell (Mass.) Gas Light Co.

Bush, C. A., Foreman Distribution Department, Brockton (Mass.) Gas Light Co.

Carpenter, H. T., Eastern Sales' Manager, The Bristol Co., Waterbury, Conn.

Drake, F. E., Assistant, Lynn (Mass.) Gas and Electric Co.

Evans, O. B., Engineer, Peoples Gas Co., Manchester, N. H.

Fiske, G. M., President, Fiske & Co., Boston, Mass.

Haddick, J. T., Chemist, Cambridge (Mass.) Gas Light Co.

Milliken, E., Treas., Springfield (Mass.) Gas Light Co.

Parcher, H. F., Manager Appliance Dept., Springfield (Mass.) Gas Light Co.

Smith, E. P., Treasurer, Waltham (Mass.) Gas Light Co.

Spear, W. F., Sales Manager, Ruud Co., Boston, Mass.

Willien, L. J., Chemist, Springfield (Mass.) Gas Light Co.

Resignations.

The following resignations have been received and their acceptance is recommended:

Active.—C. L. Gerould, J. S. Whitaker, J. P. Harbison, E. M. Walker, A. M. Young.

Associate.—G. H. Finn, Wm. Warr, R. A. Davidson.

They would also recommend for your consideration the following papers:

"The Readiness-to-Serve Costs of Gas Supply," by William H. Gardiner, New York.

"A Reinforced Concrete Oil Tank Building: Design, Construction and Cost," by Chas. F. Leonard, Fall River, Mass.

"Filling Balloons with Coal Gas," by H. C. Crafts, Pittsfield, Mass.

"Maintaining Mantle Lights." by N. W. Gifford, East Boston, Mass.

"Disposal of Coal Tar," by Carroll Miller, Pittsburgh, Pa.

"Distribution Notes," by H. H. Kelly, Waltham, Mass.

Respectfully submitted, N. W. GIFFORD, Secretary.

The President—Gentlemen, you have heard the report of the Directors. What is your pleasure in the matter?

On motion of Mr. Morrison the report was accepted and its recommendations adopted.

ELECTION OF NEW MEMBERS.

The President—Next will be the election of members. What is your pleasure? Shall the Secretary be empowered to cast a vote?

Mr. Slade—I move that the Secretary be instructed to cast the vote of the Association for the names as read.

The President—The motion is that the Secretary cast a ballot for the names recommended by the Board of Directors. [Adopted.]

The President—Mr. Secretary, you will proceed to do as instructed. I will appoint Mr. Morrison as teller.

The Secretary—There being no objection, I cast the ballot for the names of the gentlemen as read for election to the various classes of membership.

Mr. Morrison—The total number of votes cast is 1, which is for the gentlemen nominated by the Board of Directors.

The President—Gentlemen, you will take notice that you have elected these gentlemen to membership, and if any of them are present I would like to have them rise. (Several newly elected members rose.) Let the gentlemen nearest to these incoming members extend all possible courtesies to them, because as some of them are young we should break the ice and see that they are welcomed properly.

Vice-President Africa assumed the chair and Mr. McGregor read the

PRESIDENT'S ADDRESS.

Gentlemen of the New England Association, and Guests: It is only my high regard for well-established precedent that constrains me to submit a President's address. The temptation has come to me, frequently, to dispense with it and proceed directly to the business before the meeting. Never before, in my experience and opinion, was the business situation with the state of the public mind better adapted for a policy of doing much and saying little. The recent weeks and months have, to an unusual degree, furnished food for thought to all reasoning men. Bound together as we are as a nation, no portion of the body politic can unduly suffer and the balance remain unaffected. Directly or indirectly, all feel the influence of great prosperity in the land or of business depression. Moreover, you have on file, or in hand, a large number of "undigested" presidential messages or addresses—and messages are not as popular at present as they were some time since. What I have to say, then, will be brief—more in the line of suggestion than of comment. Conditions in our industry have changed but little during the year since I last addressed you. It is surprising how conservative we gas men really are, especially here in America. Everything goes to show that as a whole we follow stereotyped processes closer than do our brothers across the ocean. Innovation in practice, improvement in process, novelty in machinery, is more in evidence abroad than here—national belief to the contrary notwithstanding. It is to be regretted, as I stated in my former address, that more attention is not given to the by-products of our plants. Economical administration demands that we ourselves should "work" these up, and if it is not practical for neighboring companies to combine in erecting reducing plants, then to arrange some other profitable way of securing a larger income from our valuable—increasingly valuable—residuals. With the high price for sulphate of ammonia, and the universal demand for it for agricultural purposes; with the ease with which the sulphuric acid can be extracted from our oxides, and the further use of the burnt spent oxide in the purifying boxes; with all the remunerative possibilities with the tar extracts, to say nothing of the other simple factors, it does seem strange that we are so much behind European standards, and thus make harder the reducing of the net cost of production.

The past year has been a spectacular one in a business way—the country having experienced during a twelvemonth all the thrills of an unexampled prosperity and all the throes and agony of financial panic and depression. But, even so; it has continued well with our own industry, and from such reports as are available business has largely increased all along the line. The demand for gas continues to increase, and stoves and appliances of all kinds are becoming still more popular. It becomes more and more evident that what the gas men have done and are doing is but an earnest of what they are going to do in lighting the world. The superabundance of labor, now obtainable for the first time in 7 years, and the radical cut in prices for some of our indispensable commodities make the time propitious for extention of mains, erecting necessary or reserve holders, and such class of work that is now or soon will be in order. The clouds overhead in the world of business are giving every sign of breaking and clearing away, and, unless these are misleading, it is but a question of a reasonable time before we shall be enjoying again that degree of prosperity which has become almost a national characteristic. Prosperity is not a thing of chance, either to a nation or a corporation; it comes, as a rule, to the deserving. No one can scan the records of the most prosperous and successful of our companies or those of the foreign companies and not perceive how aggressive and up-to-date are their methods, how constant is their watch for money savers and money makers, how keen they are in adopting automatic devices that will insure reliability and curtail manual labor, and how insistent they are on satisfying the requirements of their patrons and the public. Let me indicate a few illustrations of this trend in corporate policy in Great Britain and Germany. Of supreme interest to all gas men are carbonizing methods. The vertical retort and the Woodall-Duckham continuous charging and discharging retort both have their devotees and advocates; both have passed the experimental period, and there is now no question as to their practicability and success. They are simple and natural in their operation and construction, return a much larger yield of gas and ammonia, and an infinitely superior grade of by-products. One criticism worthy of consideration has been found with the latter; and in the new and improved plant of this kind now operating in Liverpool, England, the objected to conveyor has been eliminated and a clever and efficient device substituted, thus rendering it well-nigh perfect in its operations. Those who are following closely the vertical retort developments at Dessau, Mariendorf and Cologne become almost as enthusiastic over results achieved there as Herr Korting himself, who, after his practical experience with the vertical, declares himself as fully satisfied of their superiority over all other forms. It makes little or no difference whether we are prejudiced in favor of the horizontal, the inclined, or the vertical retort; whether we believe in the small and continuous or the heavy and intermittent charges, the developments along the line indicated prove of most absorbing interest. One of our chief desires is to furnish gas at as low a price as possible; the public demands it, and it is in the furthering of business to do so. But to be able to cut the price the cost of production has to be kept down or brought lower. Things being as they are, this is only possible by utilizing, to their fullest extent, scientific methods. Science is indeed our guide and helper, and must assist us if we are to prevail over the high cost of labor and the rising scale of prices for our chief raw materials.

It is manifest, then, that the gas horizon is constantly broadening, these and similar inventions opening the way for a larger production at a lower cost. But prompt advantage should be taken of every improvement, whether it originates here or across the water. The very nature of our business and the demands that are made upon us dictate that we should not get in the "rut," that we should be ever alert to seize opportunities, as they arise, of improving our processes or plants. It pays in every sense of the word. All wisdom is not embodied and concentrated in the managers or engineers; we have not a monopoly of ideas. Innumerable are the instances on record when valuable improvements, wiser methods, more appropriate means, were suggested or worked out by an interested laborer. There is much wisdom often in their concentrated experience, and I cannot too strongly recommend the custom of some managements in making use of it. They place somewhere about the works a drop letter box, in which any employe may deposit any written suggestion he may care to make that is in the company's interest; and at stated times such communications are considered and suitable money rewards paid for the best ones. Not only does such a plan and procedure develop the interest of the men in their work, encourage their best mental effort, stimulate ambition and quicken their self respect, but often it redounds to the great benefit of the company, the welfare of the public, and the peace and contentment of all concerned.

A very important factor in obtaining and holding the good-will of the public is the conduct and deportment of your employes. Frequently the best effort of a manager is neutralized or killed by the contumacy or indifference of an employe. It follows to reason that your most responsible and reliable men are those of the longest service with you. Anything that will insure such continuous service should be in the best interests of the company. It seems to me that a good way to improve the morale of your employes and make them realize their responsibilities towards the public and the company would be to adopt a system of periodical increase in wage; say 5 or 10 per cent. increase at the end of 5 years' service, another such raise at the end of another such period, and so on until 5 such periods had passed, when the increase would stop and the maximum pay continue to be drawn. This increase cannot but be a good thing for the employe, and it will prove to be profitable for the company too in the better work done, the increased interest shown, the sense of responsibility

which it cannot fail to engender; it will also follow that the men will become extremely expert at whatever they have to do, and the monotony of the same work performed will be atoned for or counteracted by the reflection that fidelity to duty will be followed by increase in pay. The sense of drugery will be offset by the feeling that "they are getting on in the world," and the tangible evidence of it would be this fixed increase. With this plan might go a 30-year retirement agreement, when the employe could retire and draw ½ or ¾-pay as an acknowledgment of faithful and earnest service.

Before closing, I have to announce the decease, during the year, of the following members:

Thomas F. Rowland, Honorary Member.
John Q. A. Spear, Dorchester, Mass.
Frank Vogel, Claremont, N. H.

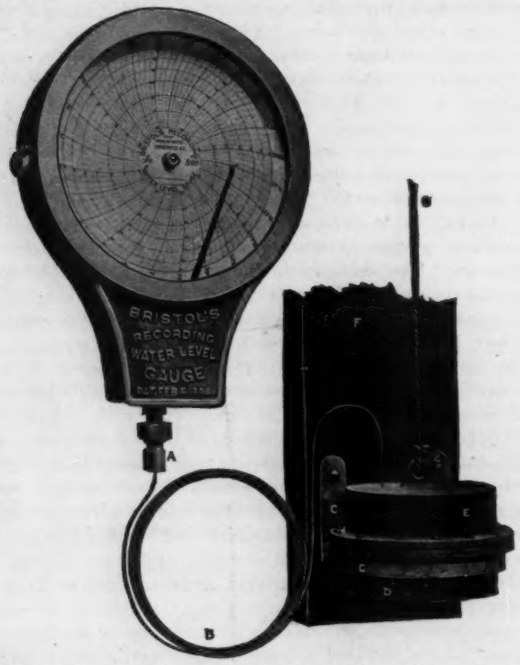
These gentlemen you knew well—genial, capable, and respected by all; we shall miss them, and their places in this Association cannot be filled. It is both a duty and a pleasure to place on record our obligation as an Association, and as individuals, to the lately lamented C. E. Sanderson. Few men of our time have done more to promote the best interests of the gas industry, few were as well equipped to advise and suggest, few were as sincerely loved, honored, and respected. Death certainly loved "a shining mark" when it took for its own, our own loved friend and comrade.

May I be permitted to trespass slightly on the domain of my successor by expressing the hope that the full influence of the Association may be exerted in favor of our adopting a universal system of testing the illuminating power of gas; there should be no difficulty in determining and deciding on some scientific unit of light, and even less on the instruments for its measurement. For, lo, these many years! the need for such has been seriously felt, and in the present state of mind of our engineers and those of Great Britain there should be little or no difficulty in their getting together and settling this important matter once and for all. With such a system in vogue the best interests of the industry cannot but be subserved.

As my term as President is about to expire, let me thank you with all my heart for the honor you have done me in twice electing me to preside over this, the oldest of American Gas Associations. It has been an honor that has carried great appreciation with it, but as the years roll round this appreciation will become all the keener through retrospect. May the future of the Association be commensurate with its splendid record of accomplishment, and may it grow in due influence and power. (To be Continued.)

The Bristol Improved Water Level Gauge.

It is often advantageous in hydraulic engineering to automatically register the fluctuations in height of water, in head and tail races,



rivers, reservoirs, canals, sewers, forebays, etc. Many devices have been employed for this purpose, but in practice trouble resulted from their mechanical complexity, difficulty of installation and the effect of cold weather on them. These objections have been seemingly overcome in the Bristol water level gauge, through the use of air pressure for transmitting the motion. A double bell casting is located permanently at the lowest point to which the water will fall. Between the halves of the bell a diaphragm of thin sheet rubber is placed so that the water pressure below compresses the air above, which pressure is transmitted through a flexible copper tube to the recording portion. It is seen, therefore, that all moving parts have been eliminated except the rubber diaphragm, which is permanently located below the freezing point in the water. The recording portion may be located at any convenient distance from the water, and can be equipped with either daily or weekly charts of almost any capacity. These recorders have also been developed for registering the depth of volumes of oil in fuel oil or storage tanks, They are made by the Bristol Company and are described in their new bulletin No. 69, which will be sent upon request from the nearest office, New York, Chicago or Waterbury, Conn.

How Best to Harmonize the Work of Solicitors and Sales Methods in a Combination Gas and Electrical Company.

[A paper prepared by MR. GEORGE WILLIAMS for the National Commercial Gas Association.]

Many who hear or read this title may be surprised to learn that there should exist a problem such as the title suggests, but the majority of members will at some time have encountered a necessity for consideration of the opinions brought forth upon the subject, whether or not in accord with the expressions contained in this paper. The objects of assigning this title as a subject matter were possibly these: The increasing number of consolidated lighting, fuel and power interests; the maintenance of separate gas and electrical departments within the same company; the frequency of examples wherein one department is found to be minimizing the efforts of another to the detriment of the corporation whose interests both are endeavoring to promote.

It is my belief that there should be only combination sales' departments employed in combination gas and electrical concerns. Many of the motives for the consolidation of the gas and electrical interests of one city are those for certain economical accomplishments which are as applicable to the selling departments as to other departments. That both gas and electrical services are almost common necessities in every home, and both popular as systems of light, heat and power, would suggest in their combined service not only many economies to the corporation in their distribution and promotion, but a decided convenience to the purchasers of the service.

Harmonizing of separate gas and electrical interests might also be profitable in those instances where a gas company and an electrical company in the same city are both devoting valuable time and energy in the work of traducing and depreciating the merits of each other's product. There is an abundance of business, either gas or electrical, which is yet accessible without the need of malicious or ignorant statements from one company against the other. A volume of business from either company equivalent to $10 per capita in any city would still find a considerable number of kerosene lamps or coal stoves in use, and it is not probable that any of us here will see the entire extermination of either of these commodities.

There need be no lack of harmony in a department which sells gas and electrical service, any more than in a department which sells gas for a variety of applications. The men involved in the work can better adjust themselves for the combination conditions in favor of the company than the company can afford to maintain duplicate departments and duplicate records for one patronage. One new business manager, one advertising man, one appliance department, one system of records and one salesman, to represent each district or otherwise specified territory, are sufficient for one combination gas and electric company. The modern department, of course, employs special talent in addition, which may require technical skill not possessed by the majority of salesmen, but these special gas or electrical experts are better qualified for their work if conversant with both services. In a combination company, such as it is my privilege to serve, the industrial fuel gas expert has frequently paved the way to electric power contracts, and the electrical power expert, in his work of substituting central station power for that of privately operated plants, has found, recommended and secured many new uses for gas which might not otherwise have been developed.

Any salesman who has shown ability to sell either the gas or the electrical service can easily make himself a competent salesman for both. The numerous uses to which gas and electricity can be applied are no greater in variety than that number which are incident to some other lines of commerce. Our 1,100-odd applications for gas and current make a small number when compared to those which many hardware salesmen are required to familiarize. Under normal conditions, in example cities of 50,000 population, a corps of 6 combination salesmen covering 6 separate districts of one city should accomplish greater results than in another city where 3 gas and 3 electric men were developing 3 districts. The total salary compensation being the same in one city as in the other, the rate of business secured would be in favor of the former department, whose men would have only one-half the area to travel, more time to devote to each prospective sale, or time to

see more prospective purchasers. At the same time it will be conceded that the customer would esteem the company for his privilege of transacting business with 1 man instead of 2. This preference would exist in favor of the combination man, whether in the event of the customer coming to the salesroom or of the salesman calling on the customer.

Still further plans might be worked to advantage toward harmonizing these interests and for cultivating restricted territory. One which may be practiced involves the work of correcting the complaints, adjusting the appliances and reading the meters, along with the duties heretofore assumed by the solicitor. In this plan the representative would not merely introduce gas and electricity, but develop a permanent service for light, heat and power. Such a work well performed would constitute a progressive service which should well reward those who purchased and those who rendered it. If the individual ideas and methods are first harmonized, the work or practice will be followed by naturally harmonious operation.

The Conducting of Gas Company Employees' Meetings and Kindred Matter.

[A paper prepared by Mr. E. N. Wrightington, for the National Commercial Gas Association.]

In order to present this subject in a practical way, I shall describe some of the features of its application to Boston, although realizing that the system is by no means perfect.

Organization of the Sales Force.—Theoretically it should be possible by proper organization to secure the same proportional results in a large city, where a number of salesmen are employed, as in a small one where the sales-manager and 3 or 4 assistants do all the work. By dividing the larger force into several groups, each coming under the direct supervision of an assistant, with all the assistants reporting to the sales-manager, we ought to get the same kind of an oversight over the work as in the small company where the sales-manager is closely in touch with all his men personally; but, as a practical matter, the difficulty comes in the personal equation.

It is impossible for a sales-manager, when he has to deal through some intermediary with the men who are actually responsible for the returns, to see that their efforts are being exerted to the best advantage; but without organization these conditions are even worse. In fact, it is absolutely out of the question for anyone man to properly look after the work of each man on a large force personally. The better the organization, and the more closely it can be brought to resemble in its different units the conduct of the entire force of a small city, the more closely we can approach the results which should be theoretically possible.

In Boston, besides the special power representive, the new building representative, and one or two experts on gas engines, piping, etc., and the half dozen demonstrators, we have about 30 men. Each man is given a district corresponding to the ledger district for which he is held responsible. This number is maintained throughout the year, but in the spring and summer the men who have been working the business territory for lighting, are transferred to the residence territory. These men are divided into 5 sections, each in charge of a section leader. The men are responsible and make reports directly to their section leader. The section leader, himself, also has a district of his own, who is responsible to the assistant manager for the work in that district and the work of the men under him.

Records and Methods of Following Opportunities.—I will not go into detail as to the general conduct of the sales force, except to bring out our method of following opportunities.

Every call which is made is recorded on a card. If no opportunity for business is found, a statement of the conditions regarding the use of gas is made, and the card is filed by location for possible future reference. Any subsequent call which may be made at this same location, whether or not under the same name, is noted upon the original card. If an opportunity is opened up at the original call, a brief note as to its character is made and a date for a subsequent call is set ahead.

Each man carries a "tickler" in which an entry is made that this call is to be made on the date assigned. At the same time a record is made in the office on a separate date card for that salesman, that the call has been assigned for that particular day. Consequently, every morning the salesman has a list of calls on opportunities which he is supposed to make that day, and in the office, as a check on his work, there is a duplicate list of calls. At the end of the day the salesman reports to his section leader his calls for the day, and he is required either to call upon each of the opportunities in the list which has been prepared, or else carry those that he has been unable to see to some future date. All the cards representing calls for that day are gone over very carefully in the office to check these future assignments, and to make sure that the opportunities are being given systematic attention. The cards for the opportunities are filed separately and contain a complete record of the calls which have been made on each particular case. They are gone over very carefully from time to time to determine just how the opportunity is being treated.

The advantages of the system apply particularly to men who are not naturally systematic in their work, and the possibility of any opportunity being dropped without due cause is prevented. The card for an opportunity must either be closed by the making of a sale, or carried ahead to a future date, or finally dropped through inability to effect the sale. The section leader goes over these cards with his men and discusses each individual case. The cards on which sales have been made, or which have been finally dropped, are examined by the manager to see whether the men are doing their work properly.

Meetings.—Each morning we have a meeting of each section, and these meetings are held separately so far as possible. The meetings are in charge of the section leader. At this meeting the experiences of the previous day are gone over very carefully. The complete reports of the day's work for each man are given in the evening. The morning meeting is thus relieved from the mere detail of filing reports, and is confined entirely to statements of the actual methods used in making a sale, or to explanations as to why business was not closed at that particular time. The probable opportunities for the work which the men expect to do for the day ahead of them are also discussed. In this way, the leader is able to follow closely the work of the men, and at the same time they all benefit from the experiences of the others.

In the evening, after the day's work, the reports are filed on the cards as previously explained. There is also a meeting of all the section leaders together, which is taken in charge by each section leader in turn. At this meeting the leaders compare notes as to the progress in the different sections and discuss ways and means of increasing business.

Once a week we hold a meeting of the whole force, which meeting lasts for an hour and is in charge of each member of the department taken in alphabetical order. At this meeting specific cases taken from the experience of the week are brought up by the different men, with a statement of just how each was handled. At the same time suggestions and criticisms are freely interchanged. A written report is made of each of the daily morning and evening and of the weekly meetings. These reports are filed for future references.

A comparative report is put on a blackboard showing the sales of each appliance for the current week as compared with that of the previous week and year. This comparative statement is analyzed and discussed and the men are commended, where a good improvement is shown, and an explanation is demanded if the record is a poor one.

We usually confine the meeting of each week to one general subject. At seasonable times our discussion will be upon, say, the range, water heater, gas arc, room heater, gas log, or industrial fuel gas appliances, etc. The idea is to concentrate each week upon some definite idea; having the men start off with that thought in the morning and carry it alongwith them through the day, going over it again at night to discuss the results at the weekly meeting.

Carrying out the scheme last spring, we arranged for our weekly subject to run along the lines of the different processes necessary for the final accomplishment of a sale. In order that what really amounted to a course in salesmanship might be made as practical as possible, we caused our subjects to correspond as close as possible with the main steps which the men themselves would have to go through, however brief the time actually required to do this might be, before the order was finally secured. The subjects for each week were as follows:

Bearing; knowledge of the goods; preparing the campaign.

Dealing with the Customers.

First Call: Approaching the customer; weighing the prospect; grasping an opening; awakening interest; creating a desire; immediate acceptance; preparing for next interview; leave taking.

Subsequent Calls: Studying the case; presenting new points; persistency: last resorts; enthusiasm.

Each man in the department was required to write a paper on each of these subjects, and 3 prizes were given for the best 3 essays. During the week of discussion on each of these subjects the men were required to bring out their experiences bearing upon that particular subject. The effect of bringing the attention upon these different subjects was very marked. The men began to realize that this question

of salesmanship was a very important one, and that the statement that salesmen were born and not made was only true to the extent that a man had to have the essential characteristics born in him, but that these could be developed by study and application. An analysis of the different experiences with which they came directly in contact showed them to just what extent they followed, or failed to follow the particular sales point of the week.

Club.—An important outgrowth of the organization has been the forming of a Club. This Club is entirely in the hands of the men themselves, and combines occasional social features with others more educational in their character. Every month they meet together in the clubroom as a body to listen to some paper on a subject connected with the gas business. These subjects are not necessarily those relating directly to the sale of gas but to allied subjects. The papers are read by officials and engineers of the Company who are authorities in each particular line. We have had talks on manufacture of gas: distribution; meters; appliances; demonstrating; dealing with the public, etc. The lectures have helped the men to become more familiar with the general conduct of the business.

Advantages of Meetings.—The meetings help most to create enthusiasm. When one man tells the others how he succeeded in finally securing an order, in a case which he had been following for perhaps a long time, and how finally the customer is pleased with the results accomplished, the other salesmen gather new courage to emulate his example. When called upon to report the experiences of the week, a man feels pretty small unless he can report something worth while. Besides this, the men learn to express themselves clearly with as few words as possible, and this helps them to present a case to the customer logically and concisely. The new men especially are able to grasp the methods of getting bussiness by means of these meetings in a great deal shorter time than would be possible if they had to knock around by themselves. The frequent gatherings of the men together help to develop the spirit of team work and make them all pull together with the one common purpose of increasing the sale of gas. Little misunderstandings between the men are more apt to be smoothed over and a mutual respect for the ability of others is developed.

A healthy rivalry is created not only in getting business, and thus having a chance to make a creditable report, but also in the manner of discussing the various subjects which come up at the meetings. The men realize that their remarks will be subject to friendly criticism, which causes them to give careful thought to the subject in hand. We often set two men against each other, one to take the part of the buyer, the other of the salesman. In this way they get new sales points, or find out what objections are likely to be advanced by customers, and the best way of meeting them.

In closing, perhaps I cannot give a better idea of these meetings than by reading one of the papers which was written by one of the salesmen on the weekly subject of

APPROACHING A CUSTOMER.

Ringing the bell, lady appears at the door.

"Good morning. Is this Mrs. So-and-So?"

"Yes."

"Mrs. So-and-So, I represent the Boston Consolidated Gas Company. How are your gas conditions; are you getting good service?"

"No, my lights are poor, and my gas range doesn't seem to give the satisfaction that it used to do."

"Would you like to have me look at your burners?"

"Certainly; come right in."

(Lighting one of the burners.) "No, you are not getting the light you should get. How long have these burners been in use?"

"I don't know; ever since we lived here—some 5 or 6 years."

"The trouble is with your burners. We will send you some new ones. They will probably fix your lights all right. Let me see how many you need. (Looking over the burners). I think you will need 5."

The Company furnishes these free of expense.

"Now, about your gas range (examining it). You have one of the old-timers; these ranges have been in use about 15 years, and they are actually worn out."

"Can't I have it repaired?"

"I don't believe it would pay to attempt it. The rust has eaten entirely through the lining, virtually destroying its value for baking purposes. The best thing you can do is to invest in a new range."

The above is a fair sample of the conversation which occurs when approaching a customer. It illustrates how you can get inside the house—into the kitchen, in fact; the place above all others you want to reach if you want to make a successful attack on the party to whom you want to sell. Of course, methods vary with circumstances and conditions. Given a perfect confidence in yourself, born of a thorough knowledge of your goods, and you cannot fail to make an impression. Don't antagonize your prospective customer by arguing any particular point with him, even though you know he is wrong; but don't fail to give him the facts if he appeals to you direct.

Be courteous always, no matter what the circumstances. You can afford to be insulted, but you cannot afford to lose your temper. Watch every opportunity to do your customer a favor, for in this way you will place them under obligation to you and make them feel that they ought to give you some return for the same.

The Use of Mechanical and Record Devices in the Accounting Department of a Gas Company.

[A paper prepared by MR. F. H. BARNITZ, Consolidated Gas Company, New York, for the National Commercial Gas Association.]

Mechanical and record devices were invented to save time and labor. They also save brain energy. We often hear the expression, "This or that machine will save the time of half a dozen men." The machine not only saves their time but also saves the man or men operating it brain fatigue. Increases physical energy; saves brain energy. At the same time no concern wishes its employees to become mere machines. The time may come when most things clerical may be done more satisfactorily by machines; that time is not the present. At present the gas company accomplishes results through the individual and collective efforts of its employees without the wholesale introduction of mechanical devices. However, it has installed appliances and recording devices which save time and labor and aid its men in their work, and it is to these aids I shall briefly call your attention.

The Arithmometer, better known as the adding machine, is one of the best illustrations of a labor and time saving device in use by a gas company. To facilitate the use of this machine gas companies adopted the coupon form of bill. When bills are paid the coupons become records of payments. They are detached by collectors when bills are collected and are cut off by means of a "coupon cutter" when bills are paid to cashiers. The amounts paid as indicated by these coupons are listed on the "adding machine," by ledgers and in numerical order, according to folios, and the ledger clerks post their accounts from these coupons, stamping along the side of the corresponding amounts, on the adding machine list, the date of payment. The arithmometer lists contain the amount of cash collected by each collector, amount paid to cashiers, amount paid through mail, and a recapitulation recording the total amount paid daily on each ledger. These payments, if recorded in books in long hand, would require a larger clerical force than is required with the machine. The collectors also would be compelled to report to the office at an earlier hour in order to list their collections and foot their books. A company with a large force of collectors, cashiers and bookkeepers, finds the employment of these machines a very important item of economy. The arithmometers are also used for taking off outstanding ledger balances at the end of the month. When outstandings are listed on the machine, one pull of the lever prints the total amount outstanding, thus saving the bookkeepers all the time which they would require without the aid of the machine to foot same.

Bill "Coupon Cutter." A small machine used in the cashier's department, cuts the cash coupons from the gas bill, stamps the date paid and cashier's number on both the coupon and bill. With one pull of the lever this machine cuts the coupon from the bill, receipts the bill, and in a second the cashier is able to hand the bill to the consumer receipted.

"Coin Counting" machines are used for counting the quarters collected from prepayment meters. The quarters are emptied by the collector into the hopper of this machine and fed into a circular disk, which is constructed to accommodate only 25-cent pieces. The coins drop into a canvas bag attached to machine and an indicator, similar to a cyclometer, records the number of coins passing into the bag. When the last coin from the hopper has passed through the machine the collector knows exactly the number of quarters he has collected and the amount of money. The bag is then tied and tagged for the bank. Formerly collectors stacked their coin in packages of $5, which process took considerable time. The time saved by machine can be employed by collectors on the district. The time saved is con-

siderable when one considers that one gas company employs 38 quarter meter collectors who collected during 1907 about 5,900,000 quarters.

The "Addressograph Machine" is used extensively by the Company for printing all the consumers gas bills. The machine prints the ledger, folio, name, address and part supplied by gas meter. These machines print singly, in duplicate, or in triplicate. If this work was done by bookkeepers or bill clerks in long hand the force necessary to write thousands of gas bills each month would necessarily be very large. Pending the final determination of the constitutionality of the 80-cent gas law, the gas companies of New York city must submit a list to the court of all consumers who pay their bills in full, showing the difference between the $1 and 80-cent rate. Lists are printed in duplicate by the addressograph machine, one copy is retained by the gas company. If the companies were obliged to write consumers names and addresses in long hand, one can readily understand the extra force which would be required to do this work.

Although not a mechanical device, "Carbon Record Books" are extensively used by gas companies. By means of carbon paper one impression copies on two or three tickets. Tickets are sent by the office to the meter shop. The stub fac-simile of original ticket remains in book as a permanent record of ticket and is stamped "returned by shop" and date when ticket is returned executed by meter shop and stamped "returned by bookkeeper" and date when ticket has been posted on ledger by bookkeeper. All orders effecting the status of meters are recorded in triplicate—two orders are sent to the shop—one (original) for execution, the other (duplicate) retained by meter shop as a check on original order, thereby insuring a report of all work executed. One company alone during 1907 sent 1,200,000 orders to its meter shops for execution. The force necessary to write and record these orders under any other system would naturally be larger than under the carbon book system.

Other devices used by the gas company are the following:

"Change Machine," used by cashiers for making change. Illustrating its use. A consumer pays a bill of $3.30, giving a $5 bill; the cashier presses a button—30 and 70 cents drop in his hand, and, taking a $2 bill from his bill tray, he is able to give correct change promptly.

"Transmitting Tubes" are used in some gas offices for obtaining information from different departments, saving the time of clerks in walking from one department to another, or from one floor to another. For example, information in regard to a consumer's account is required by a cashier or an application clerk. The question is placed in a carrier and shot through tube to bookkeeping department: boy at other end of tube takes the message to bookkeeper, who answers question, and boy transmits the reply to original department.

"Time Clocks" are used for recording date and time that letters, complaints, orders, etc., are received by a gas company. Order and complaint tickets stamped by clock enable a gas company to check the time that they were received and executed.

The "Reckoning Machine" in use by the accounting department of a gas company greatly facilitates calculations by performing them mechanically within the shortest possible time and without any mental effort on the part of the clerk. Arithmetical problems in multiplication and division can be solved with surprising rapidity and unfailing accuracy. The tiresome mental labor of ordinary calculation is by means of the reckoning machine reduced to the simple jotting down of the result obtained. The machine is very valuable in figuring cost work in the accounting department, and where percentages are to be recorded the machine is a wonderful labor and time saver.

I trust that these few remarks have given you some idea of the use of mechanical and record devices in a gas company. The subject is probably an uninteresting one to the members of this Association who have had no practical experience in the accounting department of a gas company. You will appreciate the fact, however, that gas companies are interested in machines and devices which will facilitate the work of their employees. Devices which save time and labor naturallp appeal to a gas company, and those which aid the employees in their work enable a company to render prompt and satisfactory service to its consumers.

THE Hon. George N. Swallow has been elected President of the Charlestown (Mass.) Gas and Electric Company, vice Mr. Charles R. Lawrence, who declined to act longer in such capacity. His banking business has increased to such an extent as to require his undivided attention.

How to Promote the Sales of Industrial Gas Appliances.

[A paper prepared by MR. W. H. ALLEN, Newark, N. J., for the National Commercial Gas Association.]

The subject of this paper is one that is often asked, and one which is dependent largely upon conditions that are rather divergent and different in each and every city, and can only be answered in a general way. That which may be the best solution or policy in one place may not be applicable or suitable in another, conditions being such that would prevent its success for a set or laid rule to follow. In the concrete, however, a general rule or formula may be accepted by us as a general or fundamental rule governing the various conditions, people and places we are obliged to meet.

First. It is quite essential and necessary for a company in starting out in this field of work to select competent canvassers whose ability for this specific line is best adapted. To procure them I have found a very difficult proposition, as the supply is exceedingly limited. Such men as a rule have to be made, and I would advise all gas companies possessing such to keep them. They are a good and valuable asset.

From his force of canvassers at times the manager can select one or more who possess more or less mechanical skill, and who have a desire to raise themselves above the position simply of gas canvassers, so-to-speak. Such, by constant instruction and by being delegated to visit all factories and industries in the territory, will gradually become familiar with the various lines of manufacturing and learn the many ways and means by which gas may be introduced to meet various heat requirements; in fact, the limitless adaptations of its use. Men so instructed gradually become competent to suggest, and finally are even capable of recommending and advising new ways and appliances to the manufacturer, giving him valuable and appreciated assistance. By this foundation building process men speedily gain confidence and soon possess justified assurance. Then the work becomes easier and, as the occasion presents itself, the best work can be done.

I would suggest that when a man is being tutored a company should not find fault or censure the canvasser for lack of orders, but assist and encourage him, if he shows any materialization. You must realize that he is in the primary stage of schooling, likewise that this end of your business is in the embryonic state, for you have been slow yourself and cannot expect more from your canvassers. He should not be discouraged, but, on the contrary, be assisted in every instance by offering him the encouragement which he deserves, especially if he is beginning to show even the smallest results, either by suggestions (however minor) or by an occasional order, even of small appliances, burners or other device. You must remember that at this stage you are establishing only the foundation of that which is to be a future business, one which will net you large returns in output. Don't expect your employee to create the entire structure with one stroke. Exercise patience and be content with the success of having accomplished a beginning. You can be assured of good future developments.

As an aid to your canvassers, also to the manufacturer, I would recommend that a display of these appliances be installed in your showroom, not merely placed on the floor and labeled what they are, their cost and what they will do, but actually install and connect them, putting them in actual operation so the canvasser may gain a practical knowledge by experimenting, thereby enabling him to better familiarize himself by practical demonstrations; thus also the manufacturer can more readily decide as to the practicability of the devices and as to whether they can be used by him in the producing of his particular line of manufacture. This plan will insure many more sales and avoid possible misunderstandings. You will find that a practical demonstration is far better than any verbal or catalogue explanation that can be given. Such will be more convincing. It will accomplish far better results after your man has awakened interest, than any other method you can devise.

Again, to a company just starting out to introduce a line of industrial gas devices, I would recommend that one of the first things to do is to procure the names of all manufacturers, their lines of manufactures, their requirements and needs, present fuel used, etc., and that a card record be made of all such, thus to ascertain what the prospects are likely to be. When completed don't be content, but continue to keep this card system up and alive at all times, adding new cards for new customers as they come in, always and constantly keeping in touch with each and every one, however small, for they all count. See to it that your canvasser calls regularly upon them personally, not spasmodically, showing

them that it is your earnest desire and purpose to assist them, either by advising or informing them of all new, up-to-date appliances, especially those gas devices which you can safely recommend. In this last matter I would caution that care and judgment be used, above all not to recommend or encourage any device about which you are in doubt, remembering that you must stand sponsor for all such recommendations, and as your reputation is at stake you cannot afford to take chances in recommending anything but the safest, best and most reliable appliances that are made. Again, the sale of a poor, insufficient or unreliable appliance will result in serious loss, not only to the consumer but to yourself, for you will not again have the confidence of the manufacturing public who hear of it. Your judgment will always be questioned in future dealings, and the prospective buyer will thereafter be very skeptical regarding your advice.

As to other methods of introducing these appliances than through the canvasser, or in ways that will at the same time greatly assist him, let me suggest various booklets, pamphlets, circulars and individual letters; also either weekly, monthly or quarterly publications with descriptive cuts, short articles or illustrations, etc., showing actual installations in your own territories; also lists of sales, indicating the number and kinds of installations during certain periods, thus showing conclusively what actual progress is being made in your territory, by whom used, giving the users, testimonials, etc.

If this latter method is adopted see that they are sent regularly to your various manufacturers and I feel assured that good results will follow. I can state positively that the money spent in this direction will develop sales which you would not otherwise accomplish as speedily, while by so doing you will greatly assist your canvasser and prepare for him the road to speedy and many successful interviews, which he would find it difficult to otherwise obtain. This is educating a class of consumers which you should strive to reach. You will find it is good missionary work; a kind which is successfully done in other lines of business to accomplish a specific purpose. The specific purpose in this case is to introduce, increase and encourage the sale of industrial gas appliances; features of our business that all are beginning to recognize as of inestimable value and worth. It means a greatly increased output of the best and cheapest fuel on earth, namely gas, and you cannot beat it.

To show you the value of these industrial appliances many instances can be cited where the monthly consumption reaches many millions of feet. One case in particular, which I recall, shows a monthly consumption on a one-third capacity only of 10,000 cubic feet per hour, and when in full operation you may well imagine the total. Many more equally as large could be mentioned, thus showing the value which these appliances are to a gas company, and by energy and constant application the increase in your output will be such as to recompense you for all the trouble and expense which you have been put to.

"King Coal" was well known once, but is rapidly being superseded by our more efficient, cleaner and cheaper fuel.

Does Advertising Pay?

[A paper prepared by Mr. J. M. Brock, for the National Commercial Gas Association.]

Your Committee requested me to prepare a paper and in it prove that advertising pays in the gas industry. As valueless as my time is, it would be time wasted to try and prove this, for it would be doing over again that which has been done time and time again. One cannot find a commercial success which does not owe a part, and a very great part of its success to advertising, and it is so with the gas industry. Gentlemen, it is no longer a question, does advertising pay? The question now is how to make advertising pay. Good advertising does pay. Unfortunately, though, some cannot distinguish between good and poor advertising. It would be egotistical for me to say that I can define between these two.

In advertising plans that I have worked out I have met with successes and also with failures. These successes and failures I carefully analyzed. I found the strong points in one and the weak points in the other, and it is these analyses—the avoiding of the failures and the trying over again of the successes—that make my failures now less frequent. So, with your kind permission, I will tell you what in my opinion constitutes *good advertising*.

I have tried all forms of publicity, having experimented with billboards, street car cards, newspapers, magazines, circular letters, announcements on the backs of gas bills, demonstrations, window displays and many other forms of publicity. All of these I found good; some, though, better than others.

Conditions to-day in the gas industry are not as hard to overcome as they were in the days when gas ranges were not so generally used. The housewife of to-day worries very little over the cost of gas fuel. She knows it's cheap; she knows that gas is perfectly safe; she is satisfied that her reputation as a baker will not be endangered by using a gas range; she knows that just as good (yes, and better) work can be done with the gas range than was possible with the old coal stove. But, even so; don't for a moment think that the work of education is over. There are still thousands who do not know the possibility of gas and these thousands must be educated.

Many of our gas men seem satisfied to spend their money for advertising, simply to keep their names before the public. Some are compelled, due to local conditions, to spend a certain amount with the newspapers in their towns, and this space which they are forced to buy is filled with mere trade announcements.

Occasionally we hear of someone engaging in the silly pranks of lighting a cigar with a $10 bill; another astonishes the native by scattering his money on the street for urchins to scramble after, and still another will bring himself into momentary prominence by purchasing some newsboy's stock at a big increase in price and then amuse himself by throwing the papers away. When we hear of these things we immediately put it down that the person guilty of such foolish pranks is a downright fool. No one though would dare accuse any of our level-headed gas men of such foolishness. Yet, many of these are daily getting rid of their dollars in a much more foolish manner and that by poor advertising methods. The person who burns his money at least has the satisfaction of smelling the smoke. The one who scatters his on the sidewalk has the satisfaction of seeing the crowds scramble for it, and the one who relieves the newsboy can excuse himself by having done something charitable. But the business man who wastefully spends his money on advertising gets nothing in return unless it is the pleasure of seeing his name in print, and some of these, if they only knew what the public thought of them, would do much better to spend their money to keep their names out of print. These same men will question the overcharge of a single penny in an account possibly running upward into the thousands. Their business methods may be so perfect that it would be impossible to take a two-cent stamp without it being missed. They will spend hundreds of dollars on time clocks, cash registers, watchmen detectors and many other devices to keep tabs throughout their plants; but, when it comes to advertising they simply O. K. the bill, sign the check and condemn advertising. Ask these men what they think of advertising and they will say, "Oh, well, for some businesses it may be all right; but I can't see where it helps us very much. It kind of lets the people know we're still doing business at the old stand, and that's about all." These same men, though, when they hire a canvasser, expect him to prove that he is earning his salary by making sales. They will not accept very long from this canvasser the statement that he is making a general impression and letting the public know that the gas company is still in business. Oh, no! They want something more substantial from the canvasser, and canvassers don't cost near as much as advertising space.

I am frequently asked, "what is the best location for an 'ad,' in a daily paper?" That's a hard question to answer, for the reason that the questioner usually has his mind fixed on what he thinks is the best position before he asks the question. Many advertisers prefer what is known as "preferred position," that is, position next to reading matter. Others believe it advisable to have their "ad." occupy the same space on the same page with each insertion. Some go to the very extreme and want their "ad." to appear surrounded on all sides by reading matter. They want to disconnect it entirely from all of the other "ads." This, I believe, is a mistake. It is very true that some read the paper only for the news it contains, but the majority of readers are interested as much in the advertising pages as in the news pages. This is particularly true with women. Such readers know exactly where to look for the "ads." and unless yours appears on the regular advertising pages, your chances for being read by this class of readers is not very good. Companionship is just as good for an advertisement as for a human being. Let your advertisement be sociably inclined—let it mix with the other "ads."; it won't get lost in the crowd, not if you make it attractive enough.

I find it a very good plan to have the location of my "ad." changed every day. I have it appear on one page one day, then changed to another page the next. I never care to have it appear in the same

place 2 days in succession, or even on the same page. Supposing every advertiser wanted his "ad." to appear in the same place every day, how monotonous a paper would grow after a few publications.

Some advertisers try to attract special attention by making their "ads." extra large. They want their "ads." to be bigger than the other fellow's. Take my word for it, making the "ad." larger does not always make it stand out as prominently as you would care to have it, and besides it's mighty expensive. To prove that it's not always not the biggest "ad.' that attracts the most attention. Take a walk up Broadway. Notice the wonderful electrical display there. The signs you see are immense and they're numerous. If any of these were placed on a side street by itself it would have a crowd around it for hours. On a side street it would be a curiosity, but in company with all the other large signs, it fails to attract any special attention. To prove this, watch the crowds that throng Broadway. It is safe to say you will not find one in a thousand who gives any outward evidence of having noticed any particular sign with special interest, and it is so in your daily papers. The mass of advertising matter there casts a shadow over your "ad.," no matter how large it may be, but if you want to make your "ad." appear stronger, make it just a little different than the others. If possible, buy a font or two of special type. Arrange with your printer to use this type on your "ads." only. Buy two or three border designs and have these used only with your "ads." This will make your "ad." stand out much more prominently; consequently will catch the eye quicker. Be careful of the maner in which your "ad." is set by the printer; see that the display is good. Don't go to the extremes and try and produce freak effects—use good taste. It would pay you to have your "ads." set by the best printer in the town. Don't leave it to the compositor of the newspaper office. He sets so many "ads." that his style becomes fixed and they are all alike. See your "ad." in type before you instruct the paper to run it. An extra dollar or two paid for composition to a good printer will bring returns which you could never hope for from a poorly set "ad."

It is often said that an advertisement should be so constructed that he who runs may read. I would change this slightly and say that an advertisement should be so constructed that he who runs will be brought to a sudden stop. A salesman cannot make sales until he has interviewed his prospective customer, and an advertisement cannot produce business until it has been read. That is the function of display; it secures an interview for you with the reader of the publication. It causes him to unconsciously give you his attention and makes his mind receptive for the argument that follows:

What to Say in Your "Ad."—That's the something that seems to bother some of our gas friends. They have been writing gas "ads." so long that they have simply written themselves out. They are at a loss to know what to say next. Whenever you're stuck for new copy call in one of your solicitors; have him tell you his troubles; have him repeat the objections offered by those he failed to sell. Analyze these objections. Then write answers to them. This you will find will make the best kind of advertising copy. Get hold of a customer yourself occasionally. Try and sell this customer a range. Remember, if possible, the different questions asked you by the customer; then hustle to your stenographer and get these questions on paper. You will ffnd enough data in them to make up a dozen "ads."

Your advertisement should be an educator. Its purpose should be to make people know what you have to sell; to make them understand the quality and value of your goods. It should supply them with a motive for buying them. It should convince the reader that he has a want. Then it should show the advantage to this reader of having this want filled, and, lastly, it should point out the means of filling the want and the advantage of filling it in the way the advertisement suggests.

Wouldn't it seem ridiculous for a person to come up before you, as I have, without having something to say? And it's exactly so in writing an "ad." Have something to say, and say it. You will find the public most attentive to listen to your message, if it contains something.

Don't try to be funny in your "ads." It's an easy matter to be able to write something funny, show a humorous picture and make your auditors laugh, and a great many advertisers fool themselves by believing that they have won their game by working up a laugh. As they grow older and wiser they will find it much easier to make a man laugh than it is to get his money. Striking pictures and clever headlines are eye-catches, I admit; but that's as far as they go. There are more advertising failures due to an attempt to be humorous than to any other cause.

Take the campaign of "Force," for instance, upon which thousands were spent. I would wager to say that there's no one at this meeting but remembers "Sunny Jim," and quite a few will remember the goose that played such a prominent part in the great advertising campaign of Omega Oil, "Sunny Jim," and the "Omega Oil" goose made hundreds laugh, but what of the men who put up the money for these "ads."; that is, the men who footed the advertising bills? When it was all over, they saw very little to laugh at, for both of these campaigns were dismal failures.

It is said that 60 per cent. of all advertisers fail simply because they spend their money for space and fill this space with what they call catchy advertising. They worry about the kind of a picture they will put in their "ads."; they ponder over the proper design to be used in their border effect; they give a great deal of thought to the ornaments that are to fill this space they have purchased. All of this has their serious consideration, but copy—the vital part—receives practically no attention at all. While display is most essential and while your "ad." should be ornamental, while you should make every effort to please the eye, don't in doing this neglect your copy.

Quoting from an article written by a very prominent advertising expert, he says as follows: "If, for instance, we had a load of hay to sell, how would we attempt to sell it? Would we show our customers the daisies that grew in it? Would we ask him to note the style of loading; the fine pair of horses that draw it, and the vandyke beard of the driver? Would we tell him that this was the same kind of hay that was raked by Maud Muller on a summer's day? Well, we guess not. We would tell him of the nutritious quality of that particular load of hay. We would tell him of the good feeding it would make for the horses. We'd name the price of that load of hay delivered. Show him where the hay was worth it and let it go at that."

And it's just so with gas ranges. If you're selling gas ranges, talk gas ranges; talk nothing but gas ranges. The woman who wants to buy the range will be interested in anything you can tell her about the range. If you have a good cut showing the range, put it in the paper, but don't put in a picture of a beautiful landscape or a lovely woman and then expect these pictures to sell ranges for you.

A newspaper came to my notice a few days ago. It was one published in a town not so far distant. This particular issue contained two advertisements; one of the local gas company, the other of the local electrical company. Both of these advertisements were of the stock variety; that is, the illustrations and part of the "ads." were furnished by a company who make a specialty of furnishing such things. The gas company's "ad." was of gas ranges; the electric company's, gas portables and an electric heated pad. I clipped these and would be pleased to show them to any who would care to see them. Our gas "ad." showed a very poorly drawn picture of a clerk, evidently in a drug store. This clerk was waiting on a lady. In big type, the "ad." went on to say somewhat as follows: "Real complexion does not come in boxes; perfect complexion comes of outdoor exercise. The gas range will give you the time to get this exercise." To say this much about 8 inches of space was occupied. In all of this space the word, gas range, appeared but once, and in this one instance it was so carefully concealed that one had to look twice before he could see it. Such an "ad." would never sell a gas range. The electric company's "ad.," though, showed a very nicely drawn picture of an interior of a room. The picture showed a portable electric light, an electric curling heater, and an electric heating pad. The story in connection with the "ad." was well written. It gave a dozen advantages for electricity. After reading the "ad." I felt disappointed to think I did not have electricity in my home. Had I, I am quite sure I would have purchased one of the electric pads.

When framing up your "ad." always remember that women buy at least 90 per cent. of that which you have to sell, and to persuade a woman to buy you must disarm her of every suspicion; you must get her complete confidence; you must give her a complete detailed description; you must tell her all about the article; talk to her directly and explicitly. Don't be afraid of tiring her, even if in your "ad." you must reiterate. Anticipate her every doubt and inquiry. Tell all, so that when she buys she knows just what she is purchasing and just what value it is to her.

Newspapers of to-day are so thoroughly read that it is hard for anybody to escape the diligent and intelligent advertisements. The advertiser who tells clearly what he has to sell and what it is for, what it costs and where it can be had, is the advertiser who wins.

Saying too much in your "ad." is a sin; saying too little a greater sin. One can be too brief. This is very nicely illustrated by a story told at one time by Benjamin Franklin. He said: "When I was a

journeyman printer, one of my companions, an apprenticed hatter, having served out his time, was about to open a shop for himself. His first concern was to have a handsome signboard with proper inscription. He composed it in these words: 'John Thompson, Hatter, Makes and Sells Hats for Ready Money.' On his signboard he then planned to have a picture of a hat. Before having the sign made he thought it well to submit it to his friends for their criticisms.

"The first he showed it to, thought the word 'Hatter' unnecessary. 'For,' said he' on your sign you say that you make hats.' So the word Hatter was crossed out.

"The next to whom he showed the sign objected to the word Makes. He said, 'This might be omitted; for,' said he, 'the customer cares not who makes the hat so long as it is good.' So the word Makes was taken off the copy.

"The third said he thought the words For Ready Money useless, as it was the custom of the place not to sell on credit, but for cash. 'Everybody,' said he, 'expects to pay.' So the words For Ready Money were taken from the sign, and the sign then read: 'John Thompson Sells Hats.'

"The next friend who saw the copy said: 'As a picture of a hat is there, why on your sign say Sells Hats? No one will expect you to give them away. What then is the use of these words?' And so that was crossed out. Even though but little remained of the original sign, when what was left was passed to another friend for criticism, he failed to see how the word Hat should appear on the sign when a picture of a hat was already there. And so the word Hat was removed; and all that was left was 'John Thompson,' and a picture."

And we find little more than that in some of the "ads." as are written by some of our gas friends.

Have you ever studied a piece of printed matter as issued by some of our big patent medicine houses? One of the first pieces of copy I ever wrote was a booklet for the "Oregon Indian Medicine Company, of Corey, Pa." It was of the type known as "Symptom Books." The object of the book was to enable the person reading it to know for himself whether or not he had any of the ailments which the medicines of that company cured. I wouldn't care to say whether a cure was ever effected by any of the remedies of this company. That was none of my affairs; I simply wrote the book and it was well written—even if I say it myself. No one, unless he had an iron constitution, could read half way through the book without feeling that he had fully two-thirds of the ailments described therein.

After I had written it, I foolishly read it, and before I got half through with the introductory pages I could feel chills and fever creeping over me. When I came to typhoid fever, I found I had it in a violent form; from the way I felt I must have had it for quite some time, and I began to wonder where I could have possibly taken it. Why, I even thought I had Saint Vitus dance. By the time I completed the book, I was positive I had ague; knew I had dyspepsia; was troubled with Bright's disease; had a modified form of rheumatism; my teeth were bad; I needed glasses, and wondered why I was not down in bed. Now, possibly, this is just a little overdrawn, but I intentionally made it so as to impress you with the valuable aid and the powerful influence of suggestion. It is really astonishing the way some are influenced by suggestions nicely put. Think of this when writing your next "ad."

What the "ad." is in counts just as much as what is in the ad." If your advertising does not actually sell goods, then by all means stop it, and to know whether the advertising is paying you or not, test it. You should keep a record of results. You should make a test of every new piece of copy you use. You will find as you make these tests that one piece of copy will pull much stronger than another, and it is the weeding out—the separating of the chaff from the wheat—that makes advertising pay. When you find a piece of copy that is selling goods, keep on using that piece as long as it will keep on selling. On the other hand, if you fail to get results, cut that piece of copy out and do it quick. You may say, how can I test this copy? Why, that's easy. There are a dozen little tests you can plan out. See how our large mail order houses have their "ads." keyed. You can key your "ad." You can use, for instance, the cut-out coupon scheme, inviting your readers to cut the coupon out, send or bring it to you and receive in return some little novelty or a piece of printed matter pertaining to a certain piece of goods. You can offer a certain stove on a certain day at a certain price. Make your "ad." read so that your customers will come to your office and ask for the stove by name. That's another way of keying an "ad."

If the manufacturers with whom you deal supply you with printed matter devote a part of your "ad." telling of a certain booklet; give it a name and invite your customers, through your "ad.," to call or write for this booklet. This will prove whether the "ad." is being read or not. Compare one paper with another to find out which brings you the best results. Then spend most of your money with the one that proves the best. If possible cut out the unprofitable paper entirely and spend the money thus saved on the paper that is giving you good returns. The success of your advertising depends very much on knowing which "ad." is pulling and which "ad." is giving you results.

The hit-or-miss plan followed by some advertisers doesn't pay. You can't afford it; so cut it out. Buy your advertising as you do your supplies. Know what you are getting for your money. If you could have a look at the circulation books of some of our local papers, you would find that their circulation, in some instances, is in the city, while in other instances, in outlying districts, possibly in territories where you have no mains—and no matter how good your copy may be or how large your "ad." if you do not sell gas where the paper circulates, your "ad." can do no good. You must know which paper will do you the most good, then advertise in that paper, cutting out such papers as cannot help you.

Utilize every means within your means to advertise. Use the backs of your gas bills. If your works are surrounded by a board fence, see that this fence is painted, telling a good gas story. If you receive booklets and other printed matter from your manufacturer, don't consign them to the waste basket or hide them in the cellar; distribute them. If you use an addressograph for making out your monthly bills, make it your business to send this printed matter out to your consumers. Address a lot of envelopes with your machine, stick a one cent stamp on them, then fill them with printed matter and send them out. Select some timely pamphlet and mail it when your bills are sent out.

See that all your clerks are familiar with the appliances you sell; insist on their demonstrating these appliances to your consumers when they call to pay their monthly bills. Don't have a clerk around your office that don't believe in gas himself; insist on their using a gas range right in their own home if they have one. Make them gas fuel enthusiasts; make them know its many advantages over other fuels. Do this, and you have a good gas salesman and a good advertisement for gas fuel. Incidentally don't fail to take a little of this medicine yourself. Get out in the kitchen once in awhile; see the range in operation; try your hand at cooking. You will have several failures at the start, but success will come in time. Feel that when a woman comes into your office and says to you that the gas range won't bake, that you can tell her she's mistaken. The trouble is not the range, but it's her. Get full of the feeling yourself. Then you will find that you can write gas range copy—copy that will sell gas ranges for you; yes, and sell any kind of gas appliances.

Do this and when you come back to the convention next year, you will agree with me that there is no need of writing a paper to prove that advertising pays in the gas industry.

Some Street Lighting Statistics.

[Prepared for the JOURNAL, by MR. H. THURSTON OWENS.]

The Bulletin, issued September, 1901, by the Department of Labor, contained a statement as to the number of street lamps in use in 134 cities of over 30,000 population, and the Bulletin, of September, 1905, contains a similar statement covering 154 cities.

Copies of these will be found in Table I.

The number of cities using the various styles is arranged in Table II.

The fact that all of the cities report electric arc lamps has often been commented upon, and it is a noteworthy showing for the electric interests. This table shows very clearly the trend toward better illumination, which is a fact in this country.

In 1901 there were almost as many cities using oil lamps as there were those using Welsbachs, while in 1905 (in which total there are 20 more cities) there were nearly four times the number of Welsbach over oil lamps. The number using open flame gas burners was nearly twice that of Welsbach in 1901, but these figures were practically reversed in 1905.

Incandescent electric gained one more city than Welsbach during the 4 years, and electric arcs show a gain of 20 or so for each city added, while open flame gas lamps show a loss of 22.

As stated above these reports do not cover the same number of cities, but they show the general conditions as to street lighting.

Electric arcs, incandescents and Welsbach gas lamps are steadily increasing, and vapor lamps are holding their own, while the open flame gas and oil lamps show a loss of 50 per cent. in popularity.

In comparing the actual figures in these same cities we find a gain of 73,425 lamps, as shown in Table III.

The significant features of this table are that in 1901 there were actually more vapor lamps in use than there were Welsbachs, and that the total number of electric lamps equaled the open flame gas.

Although the Welsbach showed a gain of over 76,000 lamps, there was a loss in open flame of over 52,000 lamps, so that the electric lamps showed a total increase which was double that of gas.

The percentage of the number in use in all cities included in the two reports is found in Table IV.

This table shows very plainly the marvellous increase in Welsbach lamps in 4 years. From 13 per cent. in 1901 to 29 per cent. in 1905! And the writer ventures to predict that arcs will no longer be No. 1 on the list when the figures for 1906 appear.

Neglecting the 20 cities which were included in the later report, we have direct comparisons of the original 134 cities as shown in Table V.

One feature of this table which should not be overlooked by gas managers is the number of cities taking up electric incandescent lamps. In a great many cases it means spectacular lighting, but gas lamps are equally well adapted for the purpose.

The actual number of lamps in use in the original 134 cities for both years is shown in Table VI.

The 20 cities which were added to the report of 1905 were all among

TABLE I.—1901.

City.	Electric.		Gas.		Vapor Lamps.	Oil Lamps.	Total.	City.	Electric.		Gas.		Vapor Lamps.	Oil Lamps.	Total.
	Arc.	Incan.	Wels.	Other.					Arc.	Incan.	Wels.	Other.			
New York city	11,723	4,020	7,387	34,287	3,226	100	....	Charleston, S. C	113	8	....	860	....	....	....
Chicago, Ills	5,780	....	....	24,980	4,276	....	....	Savannah, Ga	505	....	....	....	....	....	....
Philadelphia, Pa	9,057	....	....	20,006	14,005	....	....	Salt Lake City, Utah	435	....	....	....	....	....	....
St. Louis, Mo	944	728	9,404	1,214	2,775	....	....	San Antonio, Tex	318	....	....	....	....	....	....
Boston, Mass	3,416	28	8,637	112	2,353	....	....	Duluth, Minn	312	....	....	....	10	....	....
Baltimore, Md	1,577	101	6,185	....	1,214	....	....	Erie, Pa	443	....	631	....	....	....	....
Cleveland, O	921	....	2,658	2,924	2,422	....	....	Elizabeth, N. J	104	....	....	910	....	37	....
Buffalo, N. Y	2,569	....	....	5,738	....	....	....	Wilkes Barre, Pa	357	....	200	....	236	....	....
San Francisco, Cal	786	....	....	4,520	....	....	....	Kansas City, Kas	186	284	....	56	325	....	....
Cincinnati, O	3,368	....	....	2,234	766	....	....	Harrisburg, Pa	417	....	....	....	....	....	....
Pittsburgh, Pa	2,570	....	....	....	....	....	....	Portland, Me	301	538	337	....	....	115	....
New Orleans, La	1,624	....	....	....	....	....	....	Yonkers, N. Y	317	596	....	1,592	....	....	....
Detroit, Mich	2,002	....	....	....	....	....	....	Norfolk, Va	323	....	....	....	....	....	....
Milwaukee, Wis	1,566	....	....	2,403	821	62	....	Waterbury, Conn	220	45	....	5	....	....	....
Washington, D. C	729	376	160	a6,843	1,072	....	....	Holyoke, Mass	257	6	....	27	....	33	....
Newark, N. J	1,725	12	....	2,009	....	....	....	Fort Wayne, Ind	310	....	....	....	....	....	....
Jersey City, N. J	1,350	....	275	164	....	362	....	Youngstown, O	368	....	....	....	....	....	....
Louisville, Ky	1,587	....	....	....	....	1,006	....	Houston, Tex	380	....	....	....	....	....	....
Minneapolis, Minn	842	....	....	937	....	....	....	Covington, Ky	90	....	....	674	449	....	....
Providence, R. I	1,898	1,850	785	....	....	....	....	Akron, O	352	....	....	....	830	....	....
Indianapolis, Ind	1,277	....	....	143	259	....	....	Dallas, Tex	326	....	....	....	....	....	....
Kansas, City, Mo	240	....	....	2,203	1,362	....	....	Saginaw, Mich	263	....	....	....	....	....	....
St. Paul, Minn	408	....	....	2,510	2,625	....	....	Lancaster, Pa	306	....	....	265	....	144	....
Rochester, N. Y	2,786	....	....	144	....	....	....	Lincoln, Neb	191	....	....	....	....	....	....
Denver, Col	988	....	....	....	....	....	....	Brockton, Mass	259	238	176	....	....	....	....
Toledo, O	923	....	....	....	....	....	....	Binghamton, N. Y	327	18	156	....	....	150	....
Allegheny, Pa	1,368	....	....	....	....	....	....	Augusta, Ga	345	7	....	....	....	....	....
Columbus, O	800	....	....	....	....	400	....	Pawtucket, R. I	352	....	....	112	....	125	....
Worcester, Mass	696	13	474	1	1,800	....	....	Altoona, Pa	221	....	....	....	....	....	....
Syracuse, N. Y	1,166	....	....	....	....	34	....	Wheeling, W. Va	503	....	....	....	....	....	....
New Haven, Conn	513	....	811	300	....	....	....	Mobile, Ala	208	....	....	....	....	....	....
Paterson, N. J	742	....	....	432	....	....	....	Birmingham, Ala	209	....	....	....	....	....	....
Fall River, Mass	677	....	....	176	....	307	....	Little Rock, Ark	218	....	....	....	....	....	....
St. Joseph, Mo	380	....	....	....	....	....	....	Springfield, O	300	....	585	....	....	....	....
Omaha, Neb	336	....	900	....	500	....	....	Tacoma, Wash	318	....	....	....	....	....	....
Los Angeles, Cal	924	....	....	....	....	....	....	Haverhill, Mass	196	3	214	....	308	....	....
Memphis, Tenn	350	....	....	....	699	....	....	Spokane, Wash	201	....	....	....	....	....	....
Scranton, Pa	626	....	....	....	....	....	....	Terre Haute, Ind	378	10	....	....	....	....	....
Lowell, Mass	502	....	1,068	13	400	....	....	Dubuque, Ia	371	1	....	....	....	112	....
Albany, N. Y	650	....	....	....	....	....	....	Quincy, Ills	329	....	....	....	....	....	....
Cambridge, Mass	540	431	288	88	....	....	....	South Bend, Ind	269	....	....	3	....	....	....
Portland, Ore	712	635	....	....	....	....	....	Salem, Mass	307	251	....	....	....	....	....
Atlanta, Ga	716	450	....	....	....	....	....	Johnstown, Pa	240	....	....	....	....	....	....
Grand Rapids, Mich	512	....	....	....	....	....	....	Elmira, N. Y	437	508	....	....	....	....	....
Dayton, O	431	....	724	269	....	....	....	Allentown, Pa	161	392	....	....	....	....	....
Richmond, Va	549	....	....	158	....	....	....	Davenport, Ia	426	....	....	....	....	....	....
Nashville, Tenn	382	....	....	520	....	....	....	McKeesport, Pa	270	....	....	....	....	....	....
Seattle, Wash	130	1,160	....	....	....	....	....	Springfield, Ills	436	....	....	....	....	....	....
Hartford, Conn	754	30	....	....	....	....	....	Chelsea, Mass	215	252	....	....	....	....	....
Reading, Pa	501	421	430	....	....	....	....	Chester, Pa	194	419	....	....	....	....	....
Wilmington, Del	267	556	....	518	....	....	....	York, Pa	288	....	....	....	....	....	....
Camden, N. J	456	202	209	289	....	124	....	Malden, Mass	103	1,028	....	....	....	....	....
Trenton, N. J	356	....	....	349	....	389	....	Topeka, Kas	320	....	....	15	....	....	....
Bridgeport, Conn	483	....	150	....	248	....	....	Newton, Mass	190	979	....	957	....	207	....
Lynn, Mass	286	1,199	....	....	....	....	....	Sioux City, Ia	80	769	....	....	....	....	....
Oakland, Cal	673	....	....	....	....	....	....	Bayonne, N. J	139	....	....	853	....	....	....
Lawrence, Mass	309	607	....	....	....	....	....	Knoxville, Tenn	292	....	....	....	....	....	....
New Bedford, Mass	207	52	....	646	....	604	....	Schenectady, N. Y	253	444	....	5	....	122	....
Des Moines, Ia	345	403	....	710	20	....	....	Fitchburg, Mass	284	....	....	19	31	....	....
Springfield, Mass	787	51	....	....	....	....	....	Superior, Wis	158	....	....	....	....	....	....
Somerville, Mass	405	279	121	....	....	....	....	Rockford, Ills	395	....	....	....	....	....	....
Troy, N. Y	585	....	....	258	....	....	....	Taunton, Mass	247	....	....	74	382	40	....
Hoboken, N. J	236	....	....	77	....	....	....	Canton, O	261	....	50	....	481	....	....
Evansville, Ind	266	....	490	....	....	....	....	Butte, Mont	158	....	....	....	....	....	....
Manchester, N. H	487	....	63	....	....	51	....	Montgomery, Ala	280	....	....	....	....	....	....
Utica, N. Y	560	....	....	....	....	....	....	Auburn, N. Y	374	55	....	....	....	....	....
Peoria, Ills	535	....	....	....	....	....	....	Chattanooga, Tenn	225	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	Total	....	....	....	....	....	....	340,841

TABLE I.—1905.—GROUP I.—*Cities Having a Population of 300,000 or Over in 1905.*

City.	Electric.		Gas.		Vapor Lamps.	Oil Lamps.	Total.	City.	Electric.		Gas.		Vapor Lamps.	Oil Lamps.	Total.
	Arc.	Incan.	Wels.	Other.					Arc.	Incan.	Wels.	Other.			
New York, N. Y	13,239	4,233	29,593	13,406	4,002	100	....	San Francisco, Cal	1,393	....	5,465	....	....	....	....
Chicago, Ills	9,132	....	12,580	12,024	5,568	....	....	Pittsburgh, Pa	3,252	....	....	....	3,689	....	....
Philadelphia, Pa	10,968	....	....	22,049	13,454	....	....	Cincinnati, O	5,383	....	1,349	759	....	....	....
St. Louis, Mo	1,020	750	12,465	....	4,000	....	....	Detroit, Mich	3,241	....	....	....	....	....	....
Boston, Mass	3,757	32	9,689	171	1,964	....	....	Milwaukee, Wis	1,926	....	2,580	....	358	....	....
Baltimore, Md	1,726	....	6,663	....	1,043	....	....	New Orleans, La	1,765	....	....	....	....	....	....
Cleveland, O	1,315	....	9,831	....	1,522	....	....	Washington, D. C	993	1,093	958	6,924	1,442	....	....
Buffalo, N. Y	2,838	....	837	4,992	....	....	....	Total	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....								

TABLE I.—1905 (Continued).—GROUP II.—*Cities Having a Population of* 100,000 *to* 300,000 *in* 1905.

City.	Electric.		Gas.		Vapor Lamps.	Oil Lamps	City.	Electric.		Gas.		Vapor Lamps.	Oil Lamps.	Total.
	Arc.	Incan.	Wels.	Other.				Arc.	Incan.	Wels.	Other.			
Newark, N. J	2,154	170	....	2,131	...	....	Worcester, Mass.	774	....	540	....	1,279	....	....
Minneapolis, Minn	1,056	...	5,580	....	1,868	....	Los Angeles, Cal	1,518	3,240	....	....	....	....	....
Jersey City, N. J.	1,448	...	487	....	405	....	Memphis, Tenn	441	....	....	428	431	....	....
Louisville, Ky.	1,883	....	....	....	....	940	Omaha, Neb.	784	....	1,200	....	....	....	....
Indianapolis, Ind	1,627	....	590	....	821	....	New Haven, Conn	575	....	1,216	36	118	....	....
Providence, R. I.	1,908	2,185	845	....	.	....	Syracuse, N. Y	1,351	....	....	....	....	....	....
St. Paul, Minn	589	4	3,270	....	1,950	....	Scranton, Pa	868	....	....	....	....	....	....
Rochester, N. Y	3,672	....	....	121	....	....	St. Joseph, Mo.	502	....	....	....	.. .	....	....
Kansas City, Mo.	1,236	....	....	2,990	....	176	Paterson, N. J	795	....	....	440	....	....	....
Toledo, O	1,322	....	....	....	....	....	Fall River, Mass.	812	....	....	233	....	259	.. .
Denver, Col	1,389	90	....	....	....	....	Portland, Ore.	1,137	....	....	....	....	....	....
Allegheny, Pa	1,522	36	....	12	....	....	Atlanta, Ga	981	480	....	....	....	....	....
Columbus, O.	2,050	1,300	....	....	....	....								

GROUP III.—*Cities Having a Population of* 50,000 *to* 100,000 *in* 1905.

Seattle, Wash.	445	1,998	....	..	....	....	Hoboken, N. J	251	....	....	....	....	....	....
Dayton, O.	555	...	930	400	....	...	Peoria, Ills	824	14	....	....	....	....	....
Albany, N. Y.	682	....	....	....	....	...	Duluth, Minn	400	516	....	....	....	....	....
Grand Rapids, Mich.	726	....	....	....	....	....	Utica, N. Y.	772	....	....	....	....	....	....
Cambridge, Mass.	609	443	314	....	84	....	Manchester, N. H.	549	....	94	....	74	....	....
Lowell, Mass.	540	427	1,220	....	....	....	Evansville, Ind.	320	....	550	....	....	....	....
Hartford, Conn	820	91	....	....	....	....	Yonkers, N. Y.	300	523	2,010	....	.. .	....	....
Reading, Pa.	652	372	630	....	....	....	San Antonio, Tex.	350	....	....	....	....	....	....
Richmond, Va.	640	....	....	859	....	....	Elizabeth, N. J.	267	....	....	944	....	....	....
Nashville, Tenn.	766	2,363	....	....	....	....	Waterbury, Conn.	437	37	16	....	....	....	....
Trenton, N. J	416	....	667	1	121	....	Salt Lake City, Utah	507	6	....	....	....	....	....
Wilmington, Del.	344	433	626	....	....	....	Erie, Pa.	594	....	519	....	....	....	....
Camden, N. J	574	207	344	203	150	....	Wilkesbarre, Pa.	475	....	219	....	....	213	....
Bridgeport, Conn	530	....	....	496	...	....	Schenectady, N. Y.	558	10	....	....	....	....	....
Lynn, Mass.	319	1,256	....	..	....	. ..	Norfolk, Va	441	38	....	....	....	....	....
Troy, N. Y.	639	..	....	200	...	....	Houston, Tex.	509	....	....	....	....	....	....
Des Moines, Ia.	402	531	937	....	190	....	Charleston, S. C	222	....	563	....	10	....	....
New Bedford, Mass.	224	16	878	....	499	....	Harrisburg, Pa	543	21	....	....	....	....	....
Springfield, Mass.	987	63	....	....	....	....	Portland, Me.	326	791	388	..	....	154	....
Oakland, Cal.	795	....	....	...	....	....	Dallas, Tex.	538	....	....	....	....	....	....
Lawrence, Mass.	450	588	....	....	....	....	Tacoma, Wash	534	....	....	....	....	....	....
Somerville, Mass.	478	436	....	....	....	....	Terre Haute, Ind.	447	....	....	....	....	....	....
Kansas City, Kas.	329	98	....	....	631	....	Youngstown, O.	534	....	....	....	....	....	....
Savannah, Ga.	520	....	....	....	....	....								

GROUP IV.—*Cities Having a Population of* 30,000 *to* 50,000 *in* 1905.

Fort Wayne, Ind.	353	....	....	....	....	....	Canton, O.	399	....	284	....	77	....	....
Holyoke, Mass	496	40	....	....	....	....	Passaic, N. J	219	95	....	93	....	....	...
Akron, O	393	...	663	....	148	....	Haverhill, Mass	203	3	230	....	352	....	...
Brockton, Mass	278	536	....	....	....	....	Topeka, Kas	362	5	....	....	.. .	....	....
Saginaw, Mich.	307	....	....	....	....	....	Salem, Mass.	319	393	....		....	....	....
Lincoln, Neb.	331	....	....	....	....	....	Atlantic City, N. J.	459	....	....	190	....	....	....
Lancaster, Pa.	335	....	285	....	....	184	Chester, Pa.	240	471	....	....	....	....	....
Covington, Ky.	356	105	....	....	....	....	Chelsea, Mass.	200	....	380	....	...	....	....
Altoona, Pa.	273	....	. ..	....	....	....	Newton, Mass.	194	1,139	384	983	....	130	....
Spokane, Wash	398	....	....	....	....	....	Superior, Wis.	200	....	....	....	....	....	....
Birmingham, Ala.	274	....	....	....	...	....	Elmira, N. Y.	405	500	....	....	....	....	....
Pawtucket, R. I.	480	....	...	80	....	80	Knoxville, Tenn.	303	....	....	....	....	....	....
South Bend, Ind.	433	11	....	....	....	....	Newcastle, Pa	260	....	....	....	...	....	....
Binghamton, N. Y.	383	396	....	....	....	....	Jacksonville, Fla.	377	187	....	....	....	..	....
Augusta, Ga.	373	....	....	....	...	....	South Omaha, Neb.	152	....	....	....	....	....	....
Bayonne, N. J.	320	....	....	771	....	....	Rockford, Ills	443	....	....	....	....	....	....
Mobile, Ala.	287	....	....	....	....	...	Chattanooga, Tenn.	248	6	....	....	....	....	....
Johnstown, Pa.	390	25	....	....	....	....	Joplin, Mo.	173	232	....	....	....	....	....
McKeesport, Pa.	390	....	....	....	....	....	Galveston, Tex	230	....	....	....	....	....	....
Dubuque, Ia.	398	....	....	....	....	112	Fitchburg, Mass.	318	59	....	....	....	....	....
Butte, Mont.	270	....	....	....	....	....	Macon, Ga.	187	39	....	....	....	....	....
Springfield, O	351	. ..	764	....	....	....	Auburn, N. Y.	439	49	....	....	....	....	....
Wheeling, W. Va.	510	....	....	....	....	....	Racine, Wis	306	....	....	....	....	....	....
Sioux City, Ia	85	889	....	....	....	....	Woonsocket, R. I.	165	45	....	....	....	....	....
Bay City, Mich	387	....	....	....	....	....	Joliet, Ills.	362	....	....	....	....	....	....
Allentown, Pa.	222	437	....	....	....	....	Kalamazoo, Mich.	335	....	....	....	....	....	....
Davenport, Ia.	546	....	....	....	....	....	Wichita, Kas	217	.	....	....	234	....	....
Montgomery, Ala.	383	....	....	....	....	....	Taunton, Mass.	264	172	....	41	372	47	....
East St. Louis, Ills.	280	....	....	....	..	....	Sacramento, Cal.	500	....	....	....	....	....	....
Little Rock, Ark.	311	....	....	....	....	....	Oshkosh, Wis.	359	....	....	....	....	....	....
Quincy, Ills.	372	....	....	....	....	....	Pueblo, Col	313	156	....	....	....	....	....
York, Pa	369	....	12	....	....	....	New Britain, Conn.	165	....	167	....	....	...	....
Springfield, Ills.	560	....	....	....	156	....	La Crosse, Wis.	243	1,000	....	....	....	30	....
Malden, Mass	109	1,115	....	....	....	....								
Total	....	....	....	....	.. .	....	Total	....	....	....	....	...	....	414,266

the smaller ones in size, and only reported 8,155 lamps, mostly electric, so that the increase of Welsbach lamps is still more striking here. In general the figures for these cities show a similar result to those given in Table III. The only style of lamp that is used exclusively is arcs, but the tendency to use more than one type is increasing, as of the 134 cities 43 used arcs exclusively in 1901, as against 36 in 1905. Pittsburgh, Pa., Denver, Col., Allegheny, Pa., and Los Angeles, Cal., were among the large cities with only one style in 1901, but more than one in 1905.

New Orleans, La., Detroit, Mich., and Toledo, O., report only arcs

TABLE II.—*Number of Cities Using the Various Styles.*

	Electric		Gas.		Vapor.	Oil.	Total
	Arc.	Incandescent.	Welsbach.	Other.			
1901—134 cities.	134	44	28	50	28	21	....
1905—154 " .	154	62	45	28	31	12	.....
Increase	20	18	17	....	3	....	.....
Decrease	....	....	....	22	....	9	....

TABLE III.—*Number of Lamps in Use in all Cities of Over* 30,000 *Population.*

	Electric.		Gas.		Vapor.	Oil.	Total.
	Arc.	Incandescent.	Welsbach.	Other.			
1901—134 cities..	103,717	20,455	43,588	124,602	43,955	4,524	340,841
1905—154 " .	140,044	32,996	119,812	71,977	47,012	2,425	414,266
Increase	36,327	12,541	76,224	.....	3,057	.....	73,425
Decrease	... ..	.....	.....	52,625	.....	2,099	.....

TABLE IV.—*Percentage of Number in Use in all Cities Over* 30,000 *Population.*

	Electric.		Gas.		Vapor.	Oil.	Total
	Arc.	Incandescent.	Welsbach.	Other.			
1901—134 cities..	30	6	13	37	12	1.3	....
1905—154 " ..	34	8	29	17	11	.6	....

TABLE V.—*Number of Cities Using the Various Styles* (134 *only*).

	Electric.		Gas.		Vapor.	Oil.	Total.
	Arc.	Incandescent.	Welsbach.	Other.			
1901—134 cities..	134	44	28	50	28	21	....
1905—134 " ..	134	55	44	26	30	11	....
Increase	....	11	16	....	2	....	....
Decrease	....	....	....	24	....	10	....

TABLE VI.—*Number of Lamps in Use in* 134 *Cities.*

	Electric.		Gas		Vapor.	Oil.	Total.
	Arc.	Incandescent.	Welsbach.	Other			
1901—134 cities..	103,717	20,455	43,588	124,602	43,955	4,524	340,841
1905—134 " ..	134,357	31,242	119,645	71,694	46,778	2,395	406,111
Increase	30,640	10,787	76,057	.....	2,823	.....	65,270
Decrease	. ....	.....	.....	52,908	.....	2,129	.....

in use for both years. Syracuse, N. Y., and Portland, Ore., abandoned oil and incandescent electric lamps, respectively, by 1905, so that they now report only arcs.

No city showed a decrease of arcs, and there were large increases in Chicago, Cleveland, O., San Francisco, Cal., Cincinnati, O., Detroit, Mich., and Columbus, O.

The use of incandescent electric lamps increased largely in Washington, D. C., Columbus, O., Los Angeles, Cal., Lowell, Mass., and Nashville, Tenn., while they were abandoned in Baltimore, Md., and Portland, Ore.

No city showed a decrease of Welsbach gas lamps, and there were many important installations. Those in which the greatest number of lamps were involved were on account of changing from open flame, notably in New York city, Chicago, Cleveland, O., San Francisco, Cal., Cincinnati, O., Milwaukee, Wis., Minneapolis, Minn., and St. Paul, Minn.

The large cities which showed an increase in open flame gas lamps were Philadelphia, Pa., Washington, D. C., Newark, N. J., and Kansas City, Mo., while the following abandoned all of theirs: St. Louis, Mo., Cleveland, O., San Francisco, Cal., Milwaukee, Wis., Jersey City, N.J., Minneapolis, Minn., Indianapolis, Ind., and St. Paul, Minn.

Regarding vapor lamps, Pittsburgh, Pa., Jersey City, N. J., and Minneapolis, Minn., installed new ones, while Cincinnati, Kansas City, Omaha and Lowell abandoned theirs.

Kansas City was the only city to install new oil lamps, while Jersey City and Columbus abandoned theirs.

From the figures, and from the writer's observation, one essential of good street lighting is lacking, and that is uniformity, both as regards illuminants and fixtures. The interest in better street illumination is not confined to any one section of the country, however, and progress is being made along the lines of the best practice of illuminating engineering.

SPECIAL ENGLISH CORRESPONDENCE.

COMMUNICATED BY NORTON H. HUMPHRYS.

SALISBURY, ENGLAND, Feb. 10th, 1908.

The London Gas Companies.—Slot Meter Robbery.—Oxide Purification.

At this period of the year one naturally begins to think about how business has been going, and how the accounts will turn out for the 6 months ended Dec. 31st. If there is no direct interest in the way of personal responsibility for the working of a gas undertaking, the fact of being in some sense connected therewith is sufficient incentive to keep in touch with the progress of affairs. At all times the reports of the London gas companies are looked for by a wide circle of readers, as an indication to some extent of the state of affairs throughout the country. But on this occasion, there is more than the usual degree of interest, on account of the serious advance in the price of coal that took effect from July 1st. The first reflection which is suggested by a perusal of the published accounts for the half year ended 31st Dec. last, is the important position occupied by the coke market in particular, and the other residuals in a lesser degree, in connection with the price of gas. The price of coke always follows the price of coal. A high coal figure is also usually attended by general briskness of trade, in which the other residuals participate. The residuals act the part of a flywheel, and without them there would be more frequent and wider variations in the selling price of gas. In the case of the largest undertaking about ⅛ of the increased cost of material is covered by increased receipts for residuals. It is a great advantage to sell at a regular price. People like to know the figure they are likely to have to pay, and any commodity that is sold at an even rate will for that reason alone be more in favor than one subject to continual fluctuation. The value of the residuals as a means of assisting to that end is by no means to be despised. Without their aid, the directors of gas companies would have been compelled to face an increased working cost equivalent to nearly 6d. per 1,000 cubic feet of gas manufactured. But when with their assistance the increase is reduced to about 2d., the same can possibly be tided over without directing public attention to the price of gas by advertising an increase. So that apart from their contribution to the income the residuals can claim to occupy an important position in connection with the progress of the gas industry.

Another reflection is the development in respect to the commercial side of the residual department. The first impression with regard to residuals, in commencing gas making or any other manufacture, is that they are a nuisance to be got rid of with the least possible trouble. The primitive gas manager turned his tar and ammoniacal liquor into the nearest ditch, and sold off the coke cheaply to anyone who would take it away in 4-horse wagons. He wanted the whole time and attention at his disposal to deal with questions relating to the staple product. As things developed, it occurred to somebody or other that there was money to be made in the coke yard. Probably the point was driven home at the time of a coal famine. One or two here and there began to talk about retailing coke, and went so far as to say that coke would earn the dividend. Now it would be considered bad working if the receipts for that residual did not amount to something substantially more than the sum required for dividend. There is at present in our large towns a great idea on the subject of smokeless fuel, and in connection therewith it is possible to do a great deal in the way of introducing coke. One great difficulty is that the local coal merchants, naturally, do not recommend it in preference to coal.

It is remarkable that, notwithstanding the very large reduction in consumption represented by substituting incandescent for flat flame burners, the aggregate quantity sent out is fully maintained. That this decrease is no mere fancy, is evident when we remember that only a small percentage of flat flame burners used less than 5 cubic feet per hour, and that small burners of the bijou type, using 1½ cubic feet per hour or less, have largely taken their place. With the improvements lately introduced, this size of burner may be expected to increase in favor, seeing that a cluster of three small burners gives a softer and more elegant effect than one larger burner. It is evident that what is lost on the rate per hour is made up on the number of burners or points used. The public are using more burners, and getting a greatly enhanced value for their money, which they do not fail to appreciate. A considerable stimulus in this direction has been

secured by the introduction of maintenanee schemes, which are greatly favored by the public, and a well maintained church, public hall or important shop is one of the best possible advertisements that a gas company can have.

There is evidence that the automatic meter system it not without its special disadvantages, as the South Metropolitan Gas Company report a loss of £465 represented by over 4,000 robberies of cash boxes attached to meters. I do not remember any other company that honors this item with a line to itself, and it seems more reasonable to believe that so large a sum represents the accumulations over some years, rather than that there has been an alarming epidemic of dishonesty in the highly respected district of the metropolis that is served by the company in question. The most unsatisfactory feature is that but a very small proportion of the 4,000 thieves have received their deserts at the hands of the law. If an impression is firmly established, to the effect that the slot meter till is a safe and undetectable form of robbery, the loss in this direction may assume still more serious proportions. The loss per meter is small, not much over 2s., which proves that every reasonable care is taken in respect to prompt clearances. But the real expense involved is considerably greater. Every meter is presumably damaged by the thief, who depends more upon violence than upon false keys, and requires to be exchanged and repaired. The expense thus involved will be three or four times that of the actual cash loss. Considering the number of slot meters now in use, the character of the neighborhood and the exposed position in which many of them are of necessity fixed, it is remarkable that there is so little complaint. My own experience covers some few thousands of these appliances, and yet I have had very little trouble in the shape of thieving or of spurious coins. The class of population dealt with by this means are for the most part given to migratory habits, partly from choice, partly from necessity. In the case of people whose ideas of honesty are limited to the extent of supervision exercised by the police, it is easy to understand that where packing up and moving to a distance at a few days notice, the idea of clearing out the slot meter till presents itself as merely a small stroke of business. And probably many of those above instanced come under this head, or that of "empty houses." While something can be done in the way of stronger boxes that would increase the difficulty attendant upon burglarious forcing, it is shown that the expense of a contrivance of a "thief proof safe" nature on every meter would be out of the question.

The trouble above instanced is not confined to the metropolis. At the Birmingham quarter sessions last week a man was charged with breaking into a house and stealing 6s. 6d. from a slot meter. The prosecuting counsel stated that the prisoner was the leader of a gang who carried on this class of theft, and that there had been an extraordinary number of similar cases in the city. Evidence was tendered to the effect that the prisoner and his companions made a living at the expense of the Birmingham Gas Committee, and that as many as a dozen boxes had been cleared, one after the other, in the same street. The prisoner pleaded guilty, and although only 23 years of age, had a bad record, including several previous convictions. He received the exemplary sentence of 2 years imprisonment with hard labor. At the same court, another prisoner was brought up who had led a life of crime for 15 years, and who had been known to boast that he lived on the proceeds of gas meter robbery. He was sentenced to 3 years penal servitude. When it is remembered that the loss does not come out of profits, but figures as an item in the cost of manufacturing and supplying gas, it is evident that the loss must eventually fall on the consumers. The automatic system is a great public convenience, and the price of gas supplied by it should be kept as low as circumstances will admit, seeing that a large portion of the customers earn only the bare necessities of life and perhaps not that. The severe sentences above recorded are therefore necessary, and the evil cannot be stamped out unless habitual offenders are detected and adequately punished.

It is interesting to notice that the Dutch gas magazine, *Het Gas*, has been conducting correspondence on the subject of the purification of gas from sulphuretted hydrogen. The modern gas engineer is so taken up with commercial questions, improvement of employees, hiring and maintenance schemes, and so forth, that his proper work is likely to be neglected. At any rate, one hears but little nowadays about "make per ton or per retort," cost of purification, and other questions that were formerly much in evidence and that do not admit of finality. The need for efficient carbonization and cheap purification is as important to-day as at any previous time. The chemistry of oxide of iron is an interesting and promising problem that has by no means been exhausted, and it continues the recognized agent for the purifier house. The question of purification by means of liquids or of self-purification without the aid of extraneous chemicals, by continuous revivification of the ammonia extracted in the first place from the gas, appears to have been given up as impracticable. There is the more reason, then, for finding out as much as possible about oxide.

ITEMS OF INTEREST FROM VARIOUS LOCALITIES.

Owing to ill health, Mr. Michael O'Malley, who assumed the duties of Superintendent of the Great Falls (N. H.) Gas Light Company the first ult., has been obliged to retire from that position.

Mr. A. P. McBride has been succeeded by Mr. J. D. Neely as President and General Manager of the Wichita (Kas.) Gas Company.

At the annual meeting of the shareholders in the Vicksburg (Miss.) Gas Company the Directors elected were: W. T. Rose, R. L. McLaurin, J. B. Cowan, J. Richardson, C. C. Floweree and W. F. Douthirt. The annual reports showed that the Company's business was not materially injured by the financial stringency of the last fall and winter months, and that the physical condition of the works was better than for several years past. In fact, nothing had been left undone to put them in excellent operating condition.

At a recent meeting of the shareholders in the Keene (N. H.) Gas Company the following officers were elected: Directors, W. H. Elliot, W. L. Mason, G. M. Rossman, Phil. H. Faulkner, Ralph D. Smith, Tucker Duland and J. W. Elliot. The Directors subsequently perfected the following organization: President, W. H. Elliot; Vice-President, Wallace L. Mason; Clerk and Treasurer, George M. Rossman. The Directors announced a new selling rate, to take effect March 1st, based as follows: Gross, $1.60 per 1,000; net (within 10 days), $1.44—the discount, of course, being 10 per cent. The annual reports showed that the gain in output, as between the past twelvemonth and its predecessor amounted to 12 per cent.—which showing is by far the best in the Company's history.

Mr. Paul Loewe has assumed the duties of Manager to the Moberly (Mo.) Gas and Electric Company.

The Directors of the Washington (D. C.) Gas Light Company, at a meeting convened for the purpose, adopted the following minutes to the memory of Mr. George T. Dunlop, who was prominent in the affairs of the Company for many years:

Whereas, The Board of Directors of the Washington Gas Light Company has learned with deep sorrow of the death of George T. Dunlop, who for many years has been one of its most active and honored members, therefore, be it

Resolved, That it is the sense of the Board that the community, in the death of Mr. Dunlop, has lost a highly capable and trustworthy citizen; one who did thoroughly, conscientiously and courageously, with all his might, whatsoever his hand found to do; who as a master builder in public life and affairs has left an enduring impress upon his day and generation.

Resolved, That the Board realizes that in the death of Mr. Dunlop the Washington Gas Light Company has lost an efficient officer and a staunch and true friend.

Resolved, That in token of its respect for the deceased the Secretary of the Board is hereby instructed to transmit a copy of these resolutions to the bereaved family and cause the same to be published in the daily press of this city.

Mr. Dunlop's successor on the Board of Directors is Mr. Howard Reeside. He is Vice-President of the American Security and Trust Company, and is otherwise prominent in the financial circles of Washington and Georgetown.

The Schuylkill (Pa.) County Court, in the instance of the corporation of Pottsville vs. the Pottsville Gas Company, the basis of the action having been the refusal of the Company to pay the sum of $3 for each time it desired to open a street to reach for any purpose one of its mains, has declared that such charge is excessive.

Mr. John F. Donohue has resigned the Secretaryship of the Bay State Gas Company, of Delaware. This act does not add anything to its strength.

Having decided to retire to private life, to more completely enjoy the fruits of his labor, Mr. W. W. Gibbs recently handed in his resig-

nation as a member of the Board of Directors of the United Gas Improvement Company. The resignation was accepted and Mr. Rudulph Ellis, President of the Fidelity Trust Company, was elected to succeed him.

THE Brooklyn Union Gas Company, whose Directors seem prone to the occasional doing of odd things, on the 21st ult. surprised their shareholders by declaring a dividend of 2½ per cent., payable to-day. The last dividend by the Company, which amounted to 1 per cent., was paid June 1, 1906.

"G. B.," writing from Westerly, R. I., under date of the 22d ult., incloses the following, which was clipped from a recent issue of the Woonsocket (R. I.) *Call:* "It is probable that one of the important changes in the operation of the Woonsocket Gas Company in the near future will be the extension of the pipe line from the gas works at Pawtucket to this city. The line now reaches as far north as Berkeley or Ashton. Messrs. Stone & Webster, who own the Woonsocket Electric Light Company and the Pawtucket and Woonsocket Gas Companies, have the reputation of putting into operation every measure of economy possible consistent with good service. When the Sayle interests bought the Woonsocket Gas Company it was announced that the pipe line would probably be put through. Then the Sayles joined with the Stone & Webster people, the Company was transferred to the latter, along with the Pawtucket Gas Company, and nothing further was heard of the pipe line. The Stone & Webster people have been busy reorganizing the Companies and their methods, and now that things are moving along evenly it is not surprising that the question of the pipe line should demand attention. Mr. Frank E. Holden, President of the Woonsocket Gas Company, when asked as to the possibility of the pipe line to Woonsocket, said he did not know of any move in that direction, but that it would not surprise him. The plans of Stone & Webster, he said, were not known to the officers of the local Company, and they might include the building of a pipe line. If the line is built the gas for Woonsocket will be made in Pawtucket."

WE are indebted to Mr. E. D. Johnston, President and General Manager of the P. H. & F. M. Roots Company, for a catalogue descriptive of the new rotary pump that the Company has added to its specialties. The particular attention of users is called to the built-up type of impeller, which has been found so efficient in practice that it is to be protected by Letters Patent. The main portion of the shaft is a solid forging, and the lobes of the impellers (the lobes are the wear-points of the impellers) are comparatively small, and also comparatively inexpensive to renew or replace. Accordingly, the high cost of putting new impellers in the Company's old type of pump, as well as other types of rotary pumps, is virtually done away with. Further, the new system adds very materially to the efficiency as well as the durability of the machine.

THE Noblesville (Ind.) Gas and Improvement Company has bonded its properties in the sum of $100,000, the proceeds from which are to be used as an emergency fund. This act rather goes to show that the Company will have the necessary funds on hand to construct an artificial gas plant at any time; and it looks just now that such proceeding may have to be commenced the current year, for the Company's customers not only increase rapidly in number, but the increase per meter continues in an even faster ratio. President Heath and Sec.-Treas. Davis are still holding fast to their claim, in the instance of consumers to population, that the Company still carries the banner. Equationally speaking, they put the situation like this:

Population : to consumers : : as 6,000 : 1,221.

WRITE to the H. Mueller Mfg. Company for its Leaflet, 13908.3.

THIS mention of the Mueller Company brings to mind the fact that, during the meeting of the New England Association of Gas Engineers, in a spacious parlor not far from the meeting room, the Company maintained a very handsome exhibit of its lines of special gas goods. Perhaps the greatest interest was shown in the well-set up specimen of high pressnre drilling machine exhibited; also, the display of high pressure gas cocks. Another exhibit that attracted great attention was a stack of the Company's new catalogues, marked "D," which production is certainly worthy of the reputation which this sterling house has for the thoroughness with which it handles anything that it undertakes. The exhibit was in charge of its capable and courteous representatives in the New England States, Messrs. George A. Caldwell, of Boston, and Arthur C. Pitcher, of Springfield, Mass.

MR. WALTER L. BYRON has resigned the position of Advertising Manager to the Union Gas and Electric Company, of Cincinnati, O., and that department has been consolidated with the Company's new business department. It is not that Mr. Byron failed to make good that this action was taken, but rather that the Company's Executive Committee decided that the new business division could easily handle or manage whatever advertising the Company considered necessary.

THE officials of the gas and electric companies of Wisconsin have been notified to appear before the State Railroad Commission tomorrow, to aid in a hearing over the topic of fixing the standards that are to rule throughout the State in respect of candle power, purity, pressure, etc.

THE Massachusetts Board of Gas and Electric Light Commissioners has assented to the petition of the Lynn Gas and Electric Company, whereunder the Company is authorized to issue 1,950 shares of capital stock, to be first offered to shareholders of record at $235 per share. The upset figure certainly does not look any too low. The income from the sale of the sh[illegible] is to the cancellation of outstanding obligations, and to provide for the cost of substantial additions to the manufacturing plant.

A VERY odd proceeding is that reported in the Denver (Col.) *Republican* of the 21st ult.—for our knowledge respecting it we are indebted to Mr. L. A. Briggs, of Trinidad, Col.: "A damage suit for $10,000 has been filed in the district court by the Denver Gas and Electric Company by attorney Henry E. Kelley, representing B. C. Wright. On Feb. 24, 1907, Wright's wife and daughter met their death. They were found unconscious the next morning by a paperhanger who had come to the house to complete a job on which he had been working. Mr. Wright was also found unconscious, prostrate on the floor close by where his wife and child were. Wright was resuscitated but Mrs. Wright and the child were beyond aid. Some time afterwards Wright was imprisoned charged with having murdered his wife and child. He was subsequently acquitted. In fact, prior to its termination, Judge Shattuck ordered the case taken from the jury, the Judge declaring that no case had been established. The case was a sensational one, and many theories were advanced in the 'free writing press' out here as to why Wright had killed his family, the sort of poison that had been administered, and the like. During the progress of the trial, Prof. Engle, of the University of Denver, who had been retained to make a special investigation of the case, declared that he had discovered carbon monoxide in the blood of the dead ones; also, that the gas heater was defective as to its connections. It is charged by Wright in his damage suit that the Company was negligent in having turned on the gas before the meter was properly connected, and that the heating apparatus itself was defective."

THE next meeting of the American Society of Mechanical Engineers will be held the evening of the 10th inst., at 8:15 o'clock in the assembly hall of the Engineering Societies Building, New York. The meeting will be addressed by Dr. Charles P. Steinmetz, Mem. Am. Soc. Mech. Engrs., Past President, Am. Inst. Elec. Engrs., etc., and Professor of Electrical Engineering, Union University. The title of his subject is, "The Steam Path of the Steam Turbine."

RECENTLY Col. Frank S. Richardson had as his guests, in the plant of the North Adams (Mass.) Gas Light Company, Instructor R. W. Guss and the junior members of the North Adams Normal School. The visitors were there for the purpose of going through the plant to familiarize themselves in some degree with the process of gas manufacturing. As the class is at present studying the manufacture of coal tar and the working up of its derivatives, it looks needless to add that the visitors were greatly interested in their inspection.

ON December 31st the Peoples Gas Light and Coke Company, of Chicago, had in use: 2,312 miles of street mains; meters, 446,723—a gain of 54,326; arc gas lamps, 60,822—a gain of 15,108; gas stoves, etc., 229,194—a gain of 31,575. The gross earnings of the Company for 1907 were $13,146,368.

LAST month, acting on behalf of the gas division of the Pacific Gas and Electric Company, San Francisco district, John G. Britton, President of the San Francisco Gas Company, appeared before the Board of Supervisors and urged that the minimum rate for gas in San Francisco be advanced from 85 cents per 1,000 cubic feet to $1 per 1,000 cubic feet. The correspondent who forwarded this item adds: "The matter was taken under advisement, and it is not likely that a decision will be arrived at for some weeks. Meanwhile, it may be said that gas of the quality now made and sold in San Francisco cannot be distributed on the basis of the current rate at anything like a living profit."

THE AMERICAN GAS LIGHT JOURNAL

A. M. CALLENDER & CO.,
PROPRIETORS.

THOS. J. CUNNINGHAM,
ELBERT P. CALLENDER,
EDITORS.

PUBLISHED ON EACH MONDAY OF THE YEAR AT
No. 42 Pine Street, New York.
Telephone, 2996 John.

TERMS:

SUBSCRIPTION—Three Dollars per annum, in advance, Single copies, 10 cents.

The JOURNAL is the official organ of the NEW ENGLAND ASSOCIATION OF GAS ENGINEERS.

NOTIFICATION RESPECTING ADVERTISING.

Orders for new advertising, or for changes in standing advertisements, to insure attention in the issue following their reception, must be in hand any time of Wednesday.

AGENTS:

New York—American News Company, 39 and 41 Chambers street.
Germany—Lemcke & Buechner, of New York.
England—Aug. Siegle, 30 Lime street, London.

MONDAY, MARCH 2, 1908.

The Market for Gas Securities.

Consolidated gas was in little demand last week, but it did resist successfully the drooping tendency of shares on the general list. A queer travesty on values—real, solid, improving values—is afforded in the opening figures of to day, Friday. Bid, 99; offered at 99¼! Brooklyn Union is a trifle stronger. What a sickening exhibition of drivel was the leading "Editorial" comment of a certain evening bath rag on the Brooklyn Company's action in declaring a 2½ per cent. dividend. It is put down as being a dividend in quarterly order, and is so held up as a reason even why the 80-cent charge is excessive. *Ride et sapis.*

The outside market shows unmistakable signs of strength. A prominent feature, too, of the situation is the fact that old stock of the Baltimore Consolidated Company is bid 100. Some time these shares may be worth a goodly bit of money. Keep your eyes on Bay State gas, for it looks that certain negotiations now underway may send it up quite a few pegs.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

16 WALL STREET, NEW YORK CITY.

MARCH 2.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked.*
Consolidated	$73,177,000	100	99	99¼
Central Union Gas Co.—				
1st 5's, due 1927, J. & J.	3,000,000	1,000	92	97
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	—	105
Mutual	3,500,000	100	—	170
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	85	90
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	37	43
1st Mtg. Gold Bds. 5 p. ct.	1,000,000	—	98	104
Northern Union—				
1st 5's, due 1927, J. & J.	1,950,000	1,000	90	98
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	100	105
Con. 5's, due 1945, J. & J.	1,500,000	—	97	101
Standard	5,000,000	100	70	100
Preferred	5,000,000	100	100	125
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	100	105
The Brooklyn Union	15,000,000	1,000	92	100
1st Con. 5's, due 1948, M. & N.	15,000,000	—	91¾	92
Yonkers	200,650	500	130	—
Out-of-town Companies.				
Bay State	50,000,000	50	1	1⅛
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	65
" 1st Mtg. 5's	500,000	1,000	95	100
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
" " Bonds, 5's	5,250,000	1,000	63	66
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed Gold Bonds	7,600,000	1,000	104	106¼
Cincinnati Gas and Electric Co.	29,500,000	100	91¼	92
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	92	98
Columbus (O.) Gas Lt. & Heating Co.	1,682,750	100	87	88
Preferred	3,026,500	100	81	82
Consumers, Toronto	2,000,000	50	200	204
Consolidated, Baltimore	11,000,000	100	—	105
Mortgages, 6's	3,000,000	—	—	118
Chesapeake, 1st 6's	1,000,000	—	—	—
Equitable, 1st 6's	910,000	—	—	—
Consolidated, 1st 5's	1,490,000	—	—	112
Consolidated Gas Co. of N. J.	1,000,000	100	15	17
Con. Mtg. 5's	880,000	1,000	92	95
Bonds	75,000	—	—	100
Detroit City Gas Co.	6,000,000	50	—	50
" Prior Lien 5's	4,618,000	1,000	—	98
Detroit Gas Co., 5's	381,000	1,000	75	80
" Inc. 5's	16,000	100	98½	100
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
Essex and Hudson Gas Co.	6,500,000	—	39	40
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Lt. Co., 1st Mtg. 5's	1,225,000	1,000	104½	105
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	100	105
" Bonds, 5's	10,500,000	—	101	102½
Indianapolis	2,000,000	—	60	70
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	70	82	—
" 1st Mtg. 5's	290,000	1,000	97	100
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	96
Bonds, 1st 5's	3,822,000	1,000	102	104
Laclede, St. Louis	10,000,000	100	97	97¼
Preferred	2,500,000	100	92¾	93
Bonds	10,000,000	1,000	104	104¼
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	143	145
Madison Gas & Elec. Co.				
" 1st Mtg. 6's	350,000	1,000	106	108¾
" 6 per cent. scrip, due 1910	100,000	25	60	60½
Massachusetts Gas Companies, of Boston	25,000,000	100	51¼	52
Preferred	25,000,000	100	83¾	84
Montreal, Canada	2,000,000	100	218	218¾
Nashville Gas Lt. Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	56	58
Bonds, 6's	6,000,000	—	137	138
New Haven	2,000,000	25	200	—
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	85	86
1st Mortgage	20,100,000	1,000	—	—
2d "	2,500,000	1,000	104	—
Rochester Gas & Elec. Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104½	105½
San Francisco, Cal.	15,500,000	—	—	—
St. Joseph Gas Co.—				
1st Mtg. 5's	751,000	1,000	92	—
St. Paul Gas Light Co.	1,500,000	100	45	47
1st Mortgages, 6's	650,000	1,000	113	116
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	2,465,000	1,000	96¼	—
Syracuse, N. Y.	1,375,000	100	50	55
Bonds	2,047,000	1,000	102	—
Washington, D. C.	2,000,000	20	285	300
1st Mortgage, 6's	600,000	—	—	—
Western, Milwaukee	4,000,000	—	—	—
Wilmington, Del.	600,000	50	220	—

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Position Wanted.

Superintendent or manager, especially well versed in operation (coal and water gas) and construction, wants a position with gas or gas and electric company. Good record. Good references.

1707-3 Address, "C. H. A.," care this Journal.

Position Wanted.

Successful gas and electric manager is open for position. Can furnish best of references.

Address, "EXPERIENCE,"

1706-4 Care this Journal.

POSITION WANTED

IN A COAL GAS WORKS,

By a gas man of 20 years' experience, as working superintendent and manager. Sober and a hustler. Address, "MANAGER,"

1707-2 Care this Journal.

WANTED,

Position as General Foreman.

Have had 16 years' experience with large company in charge of shop and construction work. Best of references. Address, "GENERAL,"

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WANTED,

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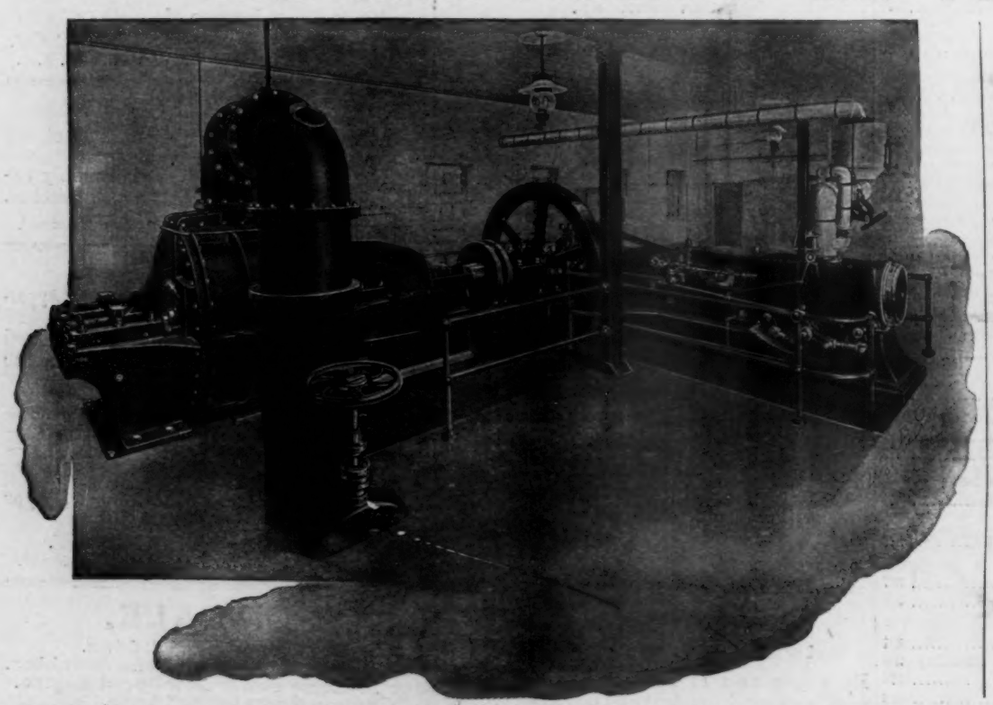

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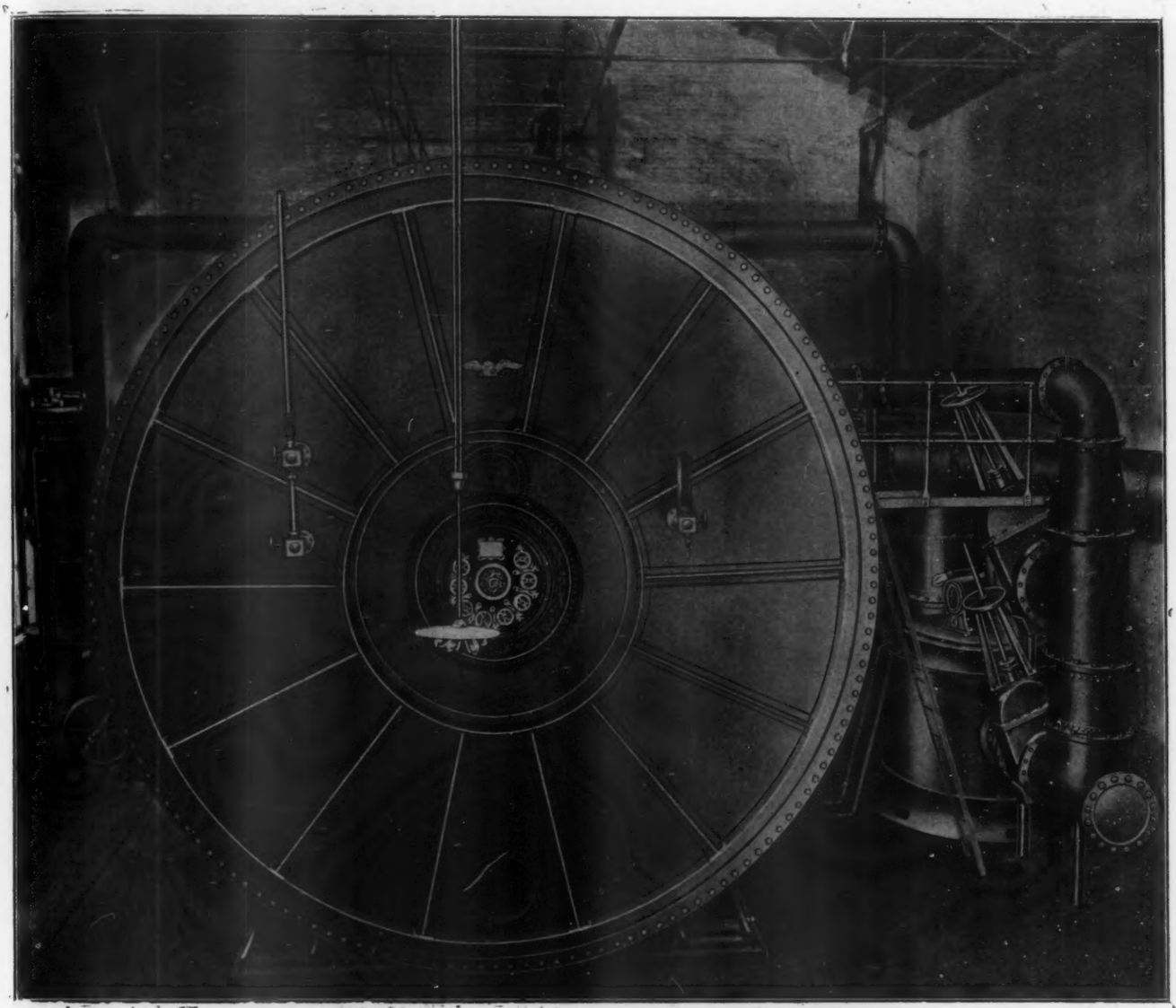

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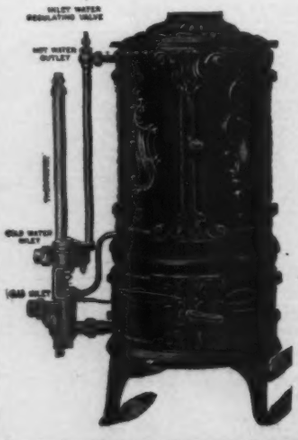

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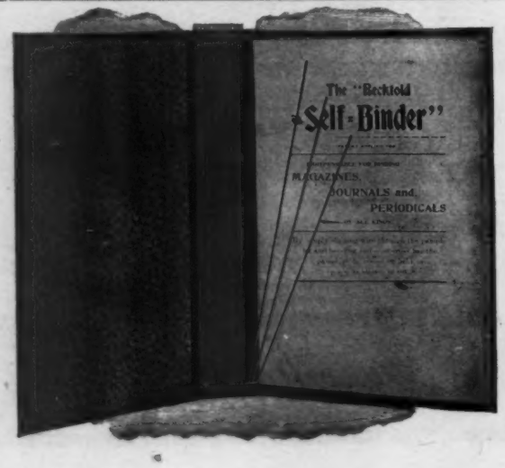

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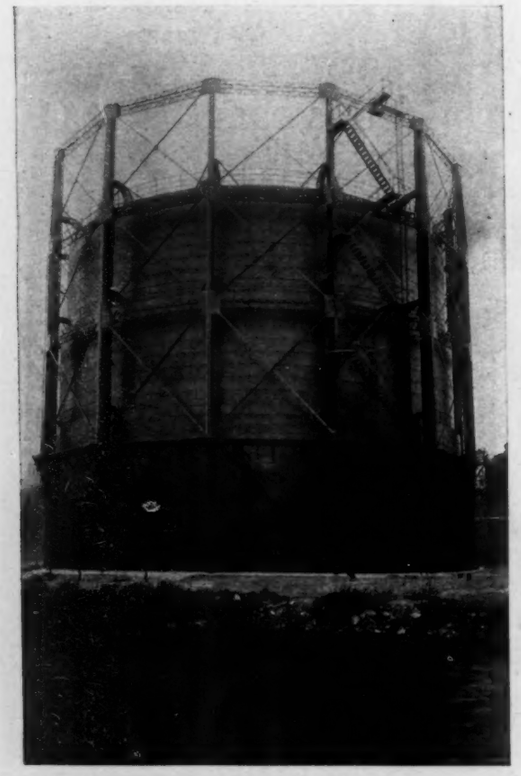

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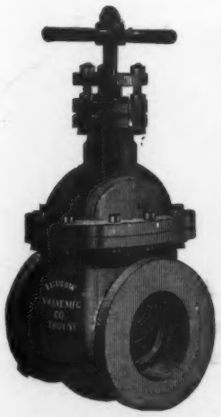

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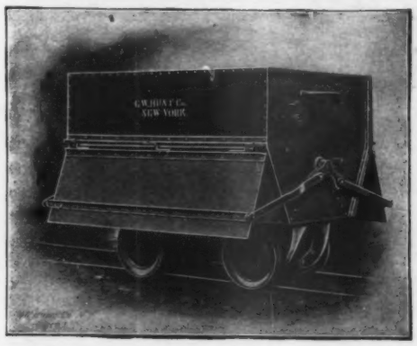

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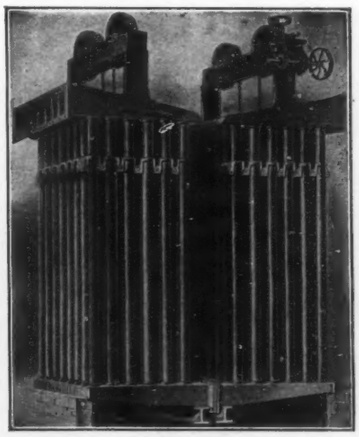

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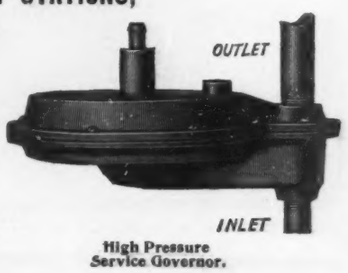

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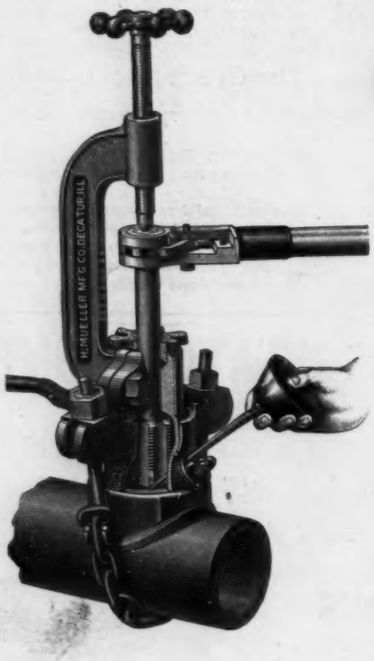

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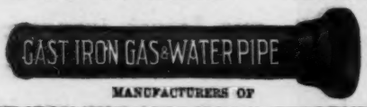

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Photometrical and Experimental Apparatus.

PUBLIC LIGHTING TABLE.

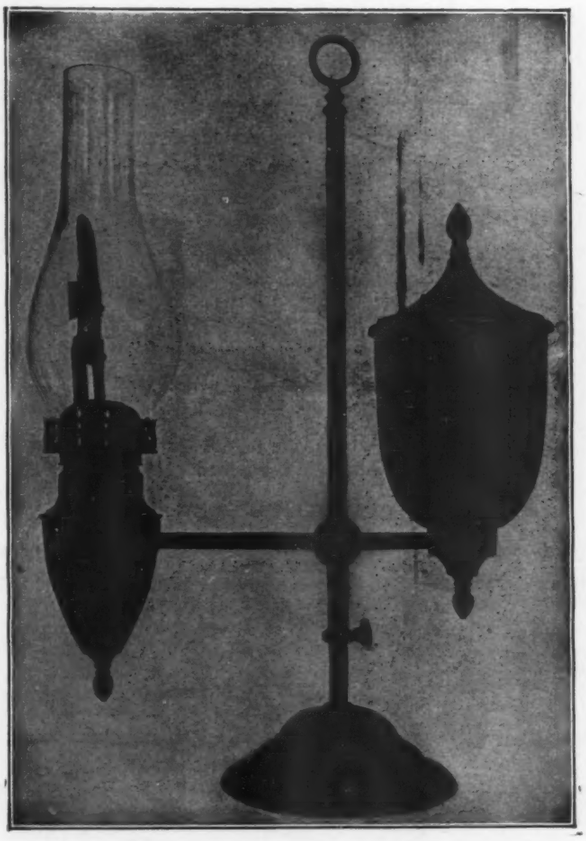
MARCH, 1908.

Day of Week.	Date.	Table No. 1. Following the Moon. Light.	Extinguish.
Sun.	1	6.20 PM	5.30 AM
Mon.	2	6.20 NM	5.30
Tue.	3	6.20	5.30
Wed.	4	6.20	5.30
Thu.	5	6.20	5.30
Fri.	6	6.20	5.30
Sat.	7	10.40	5.30
Sun.	8	11.40	5.20
Mon.	9	12 40 AM FQ	5.20
Tue.	10	1.30	5.20
Wed.	11	2.20	5.20
Thu.	12	3.10	5.20
Fri.	13	3.40	5.20
Sat.	14	4.20	5.20
Sun.	15	4.50	5.10
Mon.	16	No L.	No L.
Tue.	17	No L FM	No L.
Wed.	18	No L.	No L.
Thu.	19	6.40 PM	8.50 PM
Fri.	20	6.40	9.50
Sat.	21	6.40	11.00
Sun.	22	6.50	12.00
Mon.	23	6.50	1.10 AM
Tue.	24	6 50	2.10
Wed.	25	6.50 LQ	3.20
Thu.	26	6.50	4.10
Fri.	27	6.50	4.50
Sat.	28	6.50	4.50
Sun.	29	6.50	4.40
Mon.	30	6.50	4.40
Tue.	31	6.50 NM	4.40

TOTAL HOURS DURING 1908.

By Table No. 1.

	Hrs.Min.
January	228.30
February	187.30
March	192.00
April	160.10
May	155.10
June	138.00
July	155.50
August	173.40
September	185.20
October	214.00
November	218.10
December	226.40
Total, yr.	2235.00



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10-Candle Power.

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This lamp is a perfect substitute for the 10-candle Pentane Lamp hitherto used, and has the following advantages:

1st. It uses Standard Kerosene Oil (Pratt's Astral Oil or equivalent).

2d. It is remarkably steady. Will burn 24 hours continuously with less than 2 per cent. variation.

3d. It is much less dangerous than Pentane, which is a kind of gasolene.

4th. It is not easily affected by air currents in the photometer room.

5th. Since the lamp may burn continuously, the candle power of gas may be taken at any moment, if necessary. This insures steady illuminating power without waste of carburetting material.

6th. The first cost of the lamp brings it within the reach of even small gas works.

7th. Costs much less to maintain than a Pentane lamp or sperm candles doing the same service.

8th. Is not affected by the weather.

PUBLIC LIGHTING TABLE.

MARCH, 1908.

Day of Week.	Date.	Table No. 2. New York City. All Night Lighting. Complete Lighting in One Hour From Time Given P. M.	Complete Extinguishing in 50 Minutes From Time Given A. M.
Sun.	1	5.22	5.32
Mon.	2	5.22	5.27
Tue.	3	5.22	5.27
Wed.	4	5 22	5.27
Thu.	5	5 32	5.17
Fri.	6	5.32	5.17
Sat.	7	5.32	5.17
Sun.	8	5.32	5.17
Mon.	9	5.32	5.17
Tue.	10	5.32	5.17
Wed.	11	5.32	5.17
Thu.	12	5.42	5.07
Fri.	13	5.42	5 07
Sat.	14	5.42	5.07
Sun.	15	5.42	5.07
Mon.	16	5.42	5.07
Tue.	17	5.42	5.07
Wed.	18	5.42	5.07
Thu.	19	5 52	4.57
Fri.	20	5 52	4.57
Sat.	21	5 52	4.57
Sun.	22	5.52	4.57
Mon.	23	5.52	4.57
Tue.	24	5.52	4.57
Wed.	25	5.52	4.57
Thu.	26	5.57	4 47
Fri.	27	5.57	4.47
Sat.	28	5.57	4.47
Sun.	29	5.57	4.47
Mon.	30	5.57	4.47
Tue.	31	5.57	4.47

TOTAL HOURS DURING 1908.

	Hrs.Min.
January	481.50
February	329.15
March	351.50
April	341.50
May	233.05
June	218.10
July	282.55
August	254.55
September	292.25
October	420.45
November	374.30
December	411.05
	3992.35
Deduct on account of 50 min. extinguish'ng time	30.30
Total, yr.	3962.05

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BOSTON, 820 Beacon Building.
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ST. LOUIS, 712 Roe Building.
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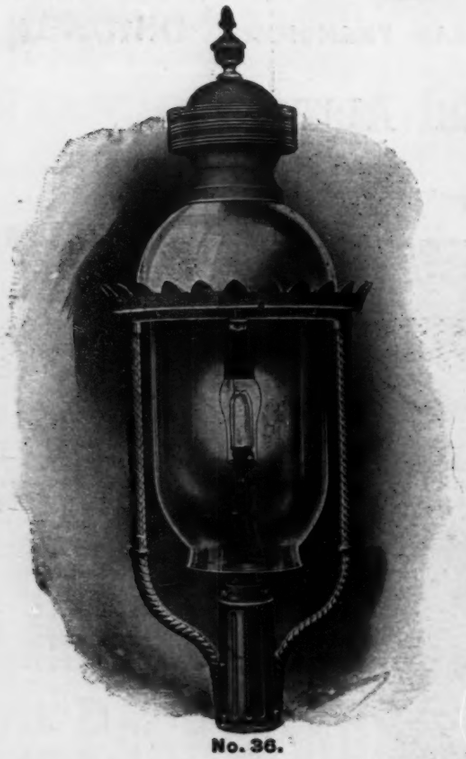
....OF AMERICA....



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Uniformly SUCCESSFUL in 150 Cities and Towns.

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POINTS OF MERIT:

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IT LIGHTS THE STREET.

Where there are no gas mains we can furnish an equally good light by our SELF-GENERATING NAPHTHA WELSBACH BURNER, and thereby supply a uniform light in all localities.

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For decorative appearance and large volume of light at a popular price to the consumer,

THE CHIC LIGHT

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Jenkintown, Pa. (2d contract).
Coney Island, N. Y.
Mexico, Mo.
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Atlanta, Ga. (2d contract).
Holyoke, Mass.
Peoria, Ills.
Schnectady, N. Y. (2d contract).
Danbury, Conn.
Galveston, Tex. (2d contract).
Quebec, Canada.
Indianapolis, Ind. (2d contract).
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Waterbury, Conn. (5th contract).
Sioux Falls, S. D. (3d contract).
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New Hartford, Conn.
Poughkeepsie, N.Y. (2d contract).
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Richmond, Va. (2d contract).
Oak Bluffs, Mass.

TOTAL SETS INSTALLED DURING YEAR, ... 43
TOTAL SETS INSTALLED TO DECEMBER 31, 1907, ... 677
TOTAL DAILY CAPACITY, TO DECEMBER 31, 1907, ... 545,865,000 cu. ft.

Tar Extractors for Carburetted Water Gas.
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Gas Analysis Apparatus.
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Straight Standpipe System for Coal Gas Retorts.
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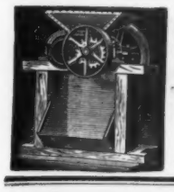

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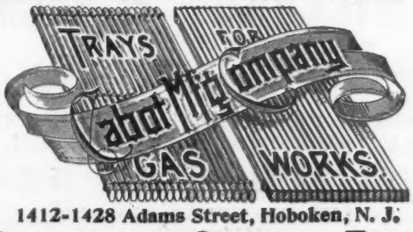

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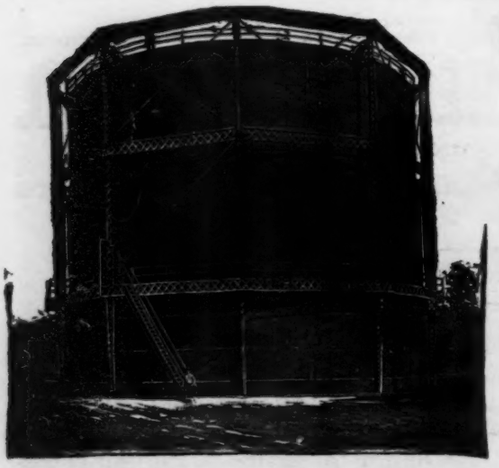

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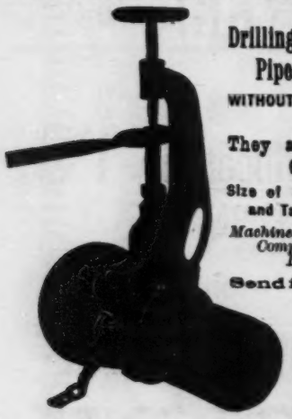

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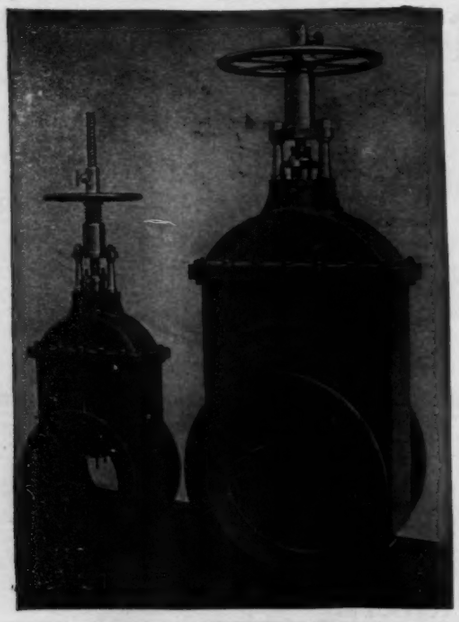

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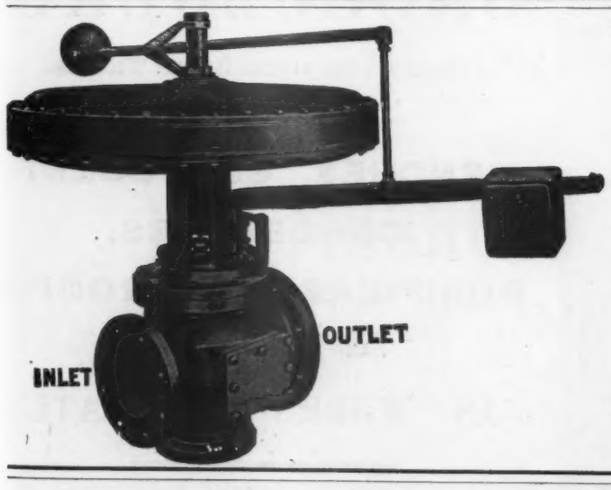

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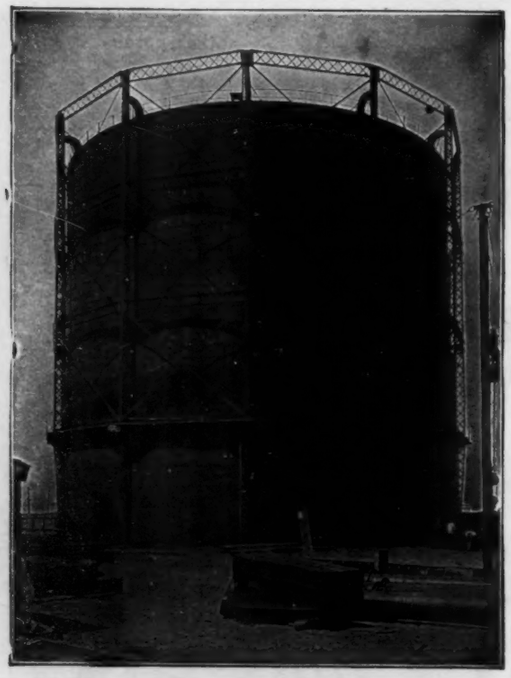

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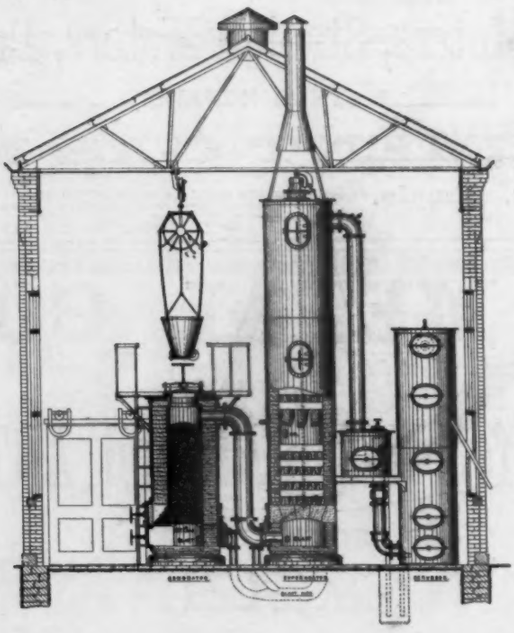

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